

## Overview

### Useful For

Screening for drug abuse involving alcohol

### Reflex Tests

Test Id	Reporting Name	Available Separately	Always Performed
ETGC	Ethyl Glucuronide Confirmation, U	Yes	No

### Testing Algorithm

Testing begins with a screening assay. If the screen is positive, then the liquid chromatography tandem mass spectrometry confirmation with quantification will be performed at an additional charge.

### Method Name

Only orderable as part of profile. For more information see:

- ADMPU / Addiction Medicine Profile with Reflex, 22 Drug Classes, High Resolution Mass Spectrometry and Immunoassay Screen, Random, Urine
- CSMEU / Controlled Substance Monitoring Enhanced Profile with Reflex, 21 Drug Classes, High Resolution Mass Spectrometry and Immunoassay Screen, Random, Urine

Immunoassay

### NY State Available

Yes

## Specimen

### Specimen Type

Urine

### Specimen Required

Only orderable as part of profile. For more information see:

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- CSMEU / Controlled Substance Monitoring Enhanced Profile with Reflex, 21 Drug Classes, High Resolution Mass Spectrometry and Immunoassay Screen, Random, Urine

**Container/Tube:** Plastic, 60-mL urine bottle

**Specimen Volume:** 5 mL**Collection Instructions:**

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

**Specimen Minimum Volume**

2.5 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**

This test uses immunoassay reagents designed to produce a negative result when no drugs are present in a natural (ie, unadulterated) urine specimen; the assay is designed to have a high true-negative rate. Like all immunoassays, it can have a false-positive rate due to cross-reactivity with natural chemicals and drugs other than those they were designed to detect. The immunoassay also has a false-negative rate to the antibody's ability to cross-react with different drugs in the class being screened.

Ethyl glucuronide is a direct metabolite of ethanol formed by enzymatic conjugation of ethanol with glucuronic acid. Alcohol in urine is normally detected for only a few hours, whereas ethyl glucuronide can be detected in the urine for 1 to 3 days.

**Reference Values**

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-ADMPU / Addiction Medicine Profile with Reflex, 22 Drug Classes, High Resolution Mass Spectrometry and Immunoassay Screen, Random, Urine

-CSMEU / Controlled Substance Monitoring Enhanced Profile with Reflex, 21 Drug Classes, High Resolution Mass Spectrometry and Immunoassay Screen, Random, Urine

Negative

Screening cutoff concentration:

Ethyl glucuronide: 500 ng/mL

**Interpretation**

This assay only provides a preliminary analytical test result. A more specific alternative method (ie, liquid chromatography tandem mass spectrometry) must be used to obtain a confirmed analytical result. A positive result using the ethyl glucuronide screen indicates only the potential presence of ethyl glucuronide and does not necessarily correlate with the extent of physiological and psychological effects.

**Cautions**

Care should be taken when interpreting results since there are many factors (eg, fluid intake and other biologic factors) that may influence a urine test result. It is possible that substances other than those investigated in the specificity study may interfere with the test and cause false-positive or negative results.

**Clinical Reference**

1. Schmitt G, Aderjan R, Keller T, Wu M. Ethyl glucuronide: an unusual ethanol metabolite in humans. Synthesis, analytical data, and determination in serum and urine. *J Anal Toxicol.* 1995;19(2):91-94
2. Dahl H, Stephanson N, Beck O, Helander A. Comparison of urinary excretion characteristics of ethanol and ethyl glucuronide. *J Anal Toxicol.* 2002;26(4):201-204. doi:10.1093/jat/26.4.201
3. Wurst FM, Skipper GE, Weinmann W. Ethyl glucuronide--the direct ethanol metabolite on the threshold from science to routine use. *Addiction.* 2003;98 (Suppl 2):51-61. doi:10.1046/j.1359-6357.2003.00588.x
4. Zimmer H, Schmitt G, Aderjan R. Preliminary immunochemical test for the determination of ethyl glucuronide in serum and urine: comparison of screening method results with gas chromatography-mass spectrometry. *J Anal Toxicol.* 2002;26(1):11-16. doi:10.1093/jat/26.1.11
5. Weinmann W, Schaefer P, Thierauf A, Schreiber A, Wurst FM. Confirmatory analysis of ethyl glucuronide in urine by liquid chromatography/electrospray ionization/tandem mass spectrometry according to forensic guidelines. *J Am Soc Mass Spectrom.* 2004;15(2):188-193. doi:10.1016/j.jasms.2003.10.010
6. 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**

This assay is a homogeneous enzyme-linked immunosorbent assay technique. The assay will be performed semiquantitatively. The assay is based on competition between free drug in the urine sample, and a drug labeled with the enzyme glucose-6-phosphate dehydrogenase for a fixed amount of specific antibody binding sites. Active enzyme converts nicotinamide adenine dinucleotide (NAD<sup>+</sup>) to NADH, which results in an absorbance change that can be measured spectrophotometrically at 340 nm. (Package insert: ETG. Immunalysis; 04/2019)

**PDF Report**

No

**Day(s) Performed**

Monday through Saturday

**Report Available**

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Same/1 to 2 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**

80307

**LOINC® Information**

Test ID	Test Order Name	Order LOINC® Value
ETGSR	Ethyl Glucuronide Scrn w/Reflex, U	58375-7
Result ID	Test Result Name	Result LOINC® Value
616033	Ethyl Glucuronide Screen, U	58375-7