Overview

Useful For
Ethyl glucuronide (EtG) and ethyl sulfate (EtS) are direct biomarkers or metabolites of ethanol. EtG and EtS can be detected up to 5 days in urine using a cutoff of 500 ng/mL. These biomarkers are often used in 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

Advisory Information
If submitting for multiple tests on 1 order, submit a total volume of 5 mL per test ordered in a single plastic container.

Specimen Required
Supplies: Aliquot Tube, 5 mL (T465)

Collection Container/Tube: Plastic urine container

Submission Container/Tube: Aliquot Tube, 5 mL (T465)

Specimen Volume: 5 mL

Collection Instructions:
1. Collect a random urine specimen.

2. Submit 5 mL in 1 plastic bottle.

3. If submitting for multiple tests on 1 order, submit 5 mL per test ordered in a single plastic container.

4. No preservative.

Additional Information:
3. For additional information, refer to ADULT / Adulterants Survey, Urine.

4. Submitting <5 mL will compromise our ability to perform all necessary testing.

Forms
1. Chain-of-Custody Request is included in the Chain-of-Custody Kit (T282).
2. If not ordering electronically, complete, print, and send a Therapeutics Test Request (T831) with the specimen.

**Specimen Minimum Volume**

2.5 mL

**Reject Due To**

All specimens will be evaluated at Mayo Clinic Laboratories for test suitability.

**Specimen Stability Information**

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urine</td>
<td>Refrigerated (preferred)</td>
<td>28 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frozen</td>
<td>28 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ambient</td>
<td>72 hours</td>
<td></td>
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</tbody>
</table>

**Clinical and Interpretive**

**Clinical Information**

Ethyl glucuronide and ethyl sulfate are minor metabolites of ethanol which are detectable in body fluids following alcohol consumption and less commonly following extraneous exposure.

**Reference Values**

Negative

**Interpretation**

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

A "high" positive (ie, >1,000 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, 500-1,000 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**

Please note that incidental exposure to alcohol in many daily use products (ie, hand sanitizers, mouthwash) may result in detectable levels of ethyl glucuronide (EtG) and/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**


**Performance**

**Method Description**

The urine sample is diluted with internal standard in 0.1% formic acid for detection by a tandem mass spectrometer (MS/MS). (Unpublished Mayo method)

**PDF Report**

No

**Day(s) and Time(s) Test Performed**

Monday, Wednesday, Friday

**Analytic Time**

2 days

**Maximum Laboratory Time**

4 days

**Specimen Retention Time**

14 days

**Performing Laboratory Location**

Rochester

**Fees and 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 Regional Manager. 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. This test has not been cleared or approved by the U.S. Food and Drug Administration.

**CPT Code Information**
80321; G0480 (if appropriate)

**LOINC® Information**

<table>
<thead>
<tr>
<th>Test ID</th>
<th>Test Order Name</th>
<th>Order LOINC Value</th>
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<tbody>
<tr>
<td>ETGC</td>
<td>Ethyl Glucuronide Confirmation, U</td>
<td>93705-2</td>
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<table>
<thead>
<tr>
<th>Result ID</th>
<th>Test Result Name</th>
<th>Result LOINC Value</th>
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</thead>
<tbody>
<tr>
<td>63421</td>
<td>Ethyl Glucuronide</td>
<td>58378-1</td>
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<tr>
<td>36848</td>
<td>Ethyl Sulfate</td>
<td>58425-0</td>
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<tr>
<td>36849</td>
<td>Ethyl Gluc/Sulfate Interpretation</td>
<td>59462-2</td>
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