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).
Test Definition: ETGC
Ethyl Glucuronide Confirmation, U

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>
</tr>
</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).
**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>
</tr>
</thead>
<tbody>
<tr>
<td>ETGC</td>
<td>Ethyl Glucuronide Confirmation, U</td>
<td>93705-2</td>
</tr>
</tbody>
</table>

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