Overview

Useful For
Confirmation of drug abuse involving delta-9-tetrahydrocannabinol (marijuana)

Method Name
Gas Chromatography-Mass Spectrometry (GC-MS) Confirmation with Quantitation

NY State Available
Yes

Specimen

Specimen Type
Urine

Advisory Information
1. For situations where chain of custody is required, a Chain-of-Custody Kit (T282) is available. For chain-of-custody testing, order THCX / Carboxy-Tetrahydrocannabinol (THC) Confirmation, Chain of Custody, Random, Urine.

2. Additional drug panels and specific requests are available. Call 800-533-1710 or 507-266-5700.

3. If urine creatinine is required or adulteration of the sample is suspected, order, ADULT / Adulterants Survey, Random, Urine.

Specimen Required

Supplies: Urine Tubes, 10 mL (T068)

Collection Container Tube: Plastic urine container

Submission Container/Tube: 10 mL tube

Specimen Volume: 10 mL

Collection Instructions:
1. Collect a random urine specimen.
2. No preservative.

Additional Information:
1. No specimen substitutions.
2. STATS are not accepted for this test.

Forms
If not ordering electronically, complete, print, and send 1 of the following forms with the specimen:
Test Definition: THCU
Carboxy-THC Confirmation, U

**General Request** (T239)

**Therapeutics Test Request** (T831)

**Specimen Minimum Volume**
5 mL

**Reject Due To**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross hemolysis</td>
<td>OK</td>
</tr>
<tr>
<td>Gross icterus</td>
<td>OK</td>
</tr>
</tbody>
</table>

**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>14 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frozen</td>
<td>14 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**

Delta-9-tetrahydrocannabinol (THC) is the active agent of the popularly abused street drug, marijuana.

Following consumption of the drug, either by inhalation or ingestion, it is metabolized to a variety of inactive chemicals, one of them being delta-9-tetrahydrocannabinol carboxylic acid.

In almost all medico-legal cases and in screening of employees, or when the patient adamantly denies THC use and the immunoassay test is positive, confirmation of the result by gas chromatography-mass spectrometry (GC-MS) is required.

**Reference Values**

Negative

**Interpretation**

The presence of tetrahydrocannabinol carboxylic acid (THC-COOH), a major metabolite of delta-9-tetrahydrocannabinol, in urine at concentrations greater than 15.0 ng/mL is a strong indicator that the patient has used marijuana.

The metabolite of marijuana (THC-COOH) has a long half-life and can be detected in urine for more than 7 days after a single use. The presence of THC-COOH in urine greater than 100.0 ng/mL indicates relatively recent use, probably within the past 7 days. Levels greater than 500.0 ng/mL suggest chronic and recent use. Chronic use causes accumulation of THC and THC-COOH in adipose tissue such that it is excreted into the urine for as long as 30 to 60 days.
days from the time chronic use is halted.

**Cautions**
No significant cautionary statements

**Clinical Reference**


**Performance**

**Method Description**
This test includes immunoassay and confirmation with quantification by gas chromatography-mass spectrometry (GC-MS). (Unpublished Mayo method)

**PDF Report**
No

**Day(s) and Time(s) Test Performed**
Monday through Saturday

**Analytic Time**
3 days

**Maximum Laboratory Time**
4 days

**Specimen Retention Time**
2 weeks

**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**
80349
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>THCU</td>
<td>Carboxy-THC Confirmation, U</td>
<td>20521-1</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>2497</td>
<td>Carboxy-THC- by GC/MS</td>
<td>20521-1</td>
</tr>
<tr>
<td>21186</td>
<td>Carboxy-THC Interpretation</td>
<td>69050-3</td>
</tr>
<tr>
<td>21187</td>
<td>Chain of Custody</td>
<td>77202-0</td>
</tr>
</tbody>
</table>