Overview

Useful For
Assessing patient compliance
Monitoring for appropriate therapeutic level
Assessing clonazepam toxicity

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

NY State Available
Yes

Specimen

Specimen Type
Serum Red

Specimen Required
Collection Container/Tube: Red top
Submission Container/Tube: Plastic vial

Specimen Volume: 1.2 mL

Collection Instructions:
1. Draw blood immediately before next scheduled dose (minimum 12 hours after last dose).
2. Within 2 hours of collection, the specimen must be centrifuged and the serum aliquoted into a plastic vial.

Forms
If not ordering electronically, complete, print, and send a Therapeutics Test Request (T831) with the specimen.

Specimen Minimum Volume
0.6 mL

Reject Due To

<table>
<thead>
<tr>
<th>Gross hemolysis</th>
<th>OK</th>
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<tbody>
<tr>
<td>Gross lipemia</td>
<td>OK</td>
</tr>
<tr>
<td>Gross icterus</td>
<td>Reject</td>
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</table>

Specimen Stability Information
Clinical and Interpretive

Clinical Information
Clonazepam (5-[2-chlorophenyl]-2, 3-dihydro-7-nitro-1, 4-benzodiazepin-2-one), a benzodiazepine is useful alone or as an adjunct in the treatment of certain seizures. In addition, it may be useful in patients with panic disorder, and restless legs syndrome.

Clonazepam has no definite antiseizure and antipanic mechanism of action, although it is believed to be related to its capacity to enhance gamma-aminobutyric acid (GABA) activity, which is the major inhibitory neurotransmitter in the central nervous system. It is able to suppress the spike and wave discharges in absence seizures and decreases the frequency, duration, amplitude, and spread of discharge in minor motor seizures.

Clonazepam is highly protein bound (approximately 85%). It is extensively metabolized by hepatic cytochrome P450, family 3, subfamily A (CYP3A) to inactive metabolites and has a half-life of 30 to 40 hours.

Reference Values
Clonazepam
Anticonvulsant: 20-70 ng/mL
Anxiolytic: 4-80 ng/mL

Some individuals may show therapeutic response outside of these ranges, or may display toxicity within the therapeutic range, thus interpretation should include clinical evaluation.

Note: Therapeutic ranges are for specimens drawn at trough (ie, immediately before next scheduled dose). Levels may be elevated in non-trough specimens.

Interpretation
The therapeutic range varies depending on the indication.

Some individuals may respond well outside of these ranges or may display toxicity within the therapeutic range, thus interpretation should include clinical evaluation.

The possibility of toxicity is increased when levels exceed 100 ng/mL.

Cautions
Specimens that are obtained from gel tubes must be removed from the gel within 2 hours.

Clinical Reference
Performance

Method Description
Clonazepam and 7-aminoclonazepam are extracted from serum using a liquid-liquid extraction technique. The organic layer is removed, dried, and reconstituted. Analysis is by liquid chromatography-tandem mass spectrometry (LC-MS/MS). (Unpublished Mayo method)

PDF Report
No

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

Analytic Time
2 days

Maximum Laboratory Time
6 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
80346 and G0480 (if appropriate)

LOINC® Information

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