Overview

Useful For
Monitoring serum concentration during therapy
Evaluating potential toxicity
Evaluating patient compliance

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

NY State Available
Yes

Specimen

Specimen Type
Serum Red

Specimen Required
Container/Tube: Red top
Specimen Volume: 1 mL

Collection Instructions:
1. Draw specimen immediately before the next scheduled dose (trough).
2. Centrifuge within 2 hours of draw.

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

Specimen Minimum Volume
0.5 mL

Reject Due To

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

Specimen Stability Information

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
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</thead>
<tbody>
<tr>
<td>Serum Red</td>
<td>Refrigerated (preferred)</td>
<td>28 days</td>
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**Clinical and Interpretive**

**Clinical Information**

*Duloxetine is an antidepressant of the serotonin-norepinephrine reuptake inhibitor class.* It is effective in treating symptoms of depression, including physical pain associated with depression; other uses include therapy of neuropathic pain, fibromyalgia, and urinary stress incontinence. Duloxetine also inhibits serotonin uptake in human platelets, and may be associated with potentiation of bleeding.

Duloxetine undergoes extensive hepatic biotransformation to numerous inactive metabolites. The drug is metabolized by CYP1A2 and CYP2D6, with moderate potential for drug interactions (duloxetine is both a substrate and a moderate inhibitor of CYP2D6). The mean elimination half-life is 12.5 hours with steady-state concentrations occurring in about 3 days. Specimens for therapeutic monitoring should be drawn immediately before the next scheduled dose (ie, trough).

Duloxetine is not recommended for patients with hepatic impairment, substantial alcohol use, or chronic liver disease. Use in patients with renal disease significantly increases exposure to duloxetine due to decreased elimination. Patients with mild-to-moderate renal dysfunction should be monitored closely; use of duloxetine is not recommended in end-stage renal disease.

**Reference Values**

30-120 ng/mL

**Interpretation**

Therapeutic ranges are not well-established, but literature suggests that patients receiving duloxetine monotherapy for depression responded well when trough concentrations were 60 to 120 ng/mL. Higher levels may be tolerated by individual patients. The therapeutic relevance of this concentration range to other uses of duloxetine therapy is currently unknown.

**Cautions**

Specimens that are obtained from gel tubes or anticoagulate collections can cause assay interference.

**Clinical Reference**


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<table>
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<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
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Performance

Method Description
Serum samples containing duloxetine are diluted in an aqueous solution containing deuterated internal standard, then injected onto a high-turbulence liquid chromatography system for online extraction. Detection is by tandem mass spectrometry.(Unpublished Mayo method)

PDF Report
No

Day(s) and Time(s) Test Performed
Tuesday; 4 p.m.

Analytic Time
1 day/2 days

Maximum Laboratory Time
8 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
80299

LOINC® Information
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