Overview

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

Method Name
LiquidChromatography-TandemMassSpectrometry(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 mL

Collection Instructions:
1. Draw blood immediately before next scheduled dose.
2. Blood drawn from patients 12 hours after an oral dose is also appropriate. It is customary to treat the patient at bedtime with a dose, then, collect specimen the following morning prior to next dose.
3. Centrifuge and remove serum from cells within 2 hours of collection.

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

Specimen Minimum Volume
0.4 mL

Reject Due To

<table>
<thead>
<tr>
<th>Gross hemolysis</th>
<th>OK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross lipemia</td>
<td>OK</td>
</tr>
<tr>
<td>Gross icterus</td>
<td>OK</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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<tbody>
<tr>
<td>Serum Red</td>
<td>Refrigerated (preferred)</td>
<td>28 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ambient</td>
<td>28 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frozen</td>
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Clinical and Interpretive

Clinical Information

Venlafaxine is a serotonin and norepinephrine reuptake inhibitor approved for treatment of major depression, anxiety and panic disorders, and social phobias. It is also used for bipolar disorder, bulimia, post-traumatic stress, obsessive behavior, and attention-deficit disorder. Venlafaxine is converted by cytochrome P450 (CYP) 2D6 to the active metabolite, O-desmethylvenlafaxine. The therapeutic range for venlafaxine includes measurement if O-desmethylvenlafaxine; optimal response is seen when combined concentrations of parent and metabolite are between 195 and 400 ng/mL. Venlafaxine is significantly affected by reduced hepatic function, but only slightly by reduced renal function.

Average elimination half-lives are 5 hours for venlafaxine and 10 hours for O-desmethylvenlafaxine, which are much shorter than many other antidepressants. For this reason, extended release formulations are available. Time to peak serum concentration is 2 hours for the regular product and 8 hours for the extended release product. Common toxicities are mild, including drowsiness, dizziness, nausea, and headache.

Reference Values

Venlafaxine + O-desmethylvenlafaxine: 195-400 ng/mL

Interpretation

Most individuals display optimal response to venlafaxine when combined serum levels of venlafaxine and O-desmethylvenlafaxine are between 195 and 400 ng/mL. Some individuals may respond well outside of this range, or may display toxicity within the therapeutic range, thus interpretation should include clinical evaluation. Risk of toxicity is increased with combined levels greater than 1,000 ng/mL. Therapeutic ranges are based on specimens drawn at trough (ie, immediately before the next dose).

Cautions

Specimens that are obtained from gel tubes are not acceptable.

Clinical Reference


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Performance

Method Description
Venlafaxine and venlafaxine metabolite are measured using acetonitrile precipitation and analysis by high-performance liquid chromatography-tandem mass spectrometry (LC-MS/MS).(Unpublished Mayo method)

PDF Report
No

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

Analytic Time
1 day

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
80299

LOINC® Information

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<td>VENLA</td>
<td>Venlafaxine, S</td>
<td>62849-5</td>
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<tr>
<td>83732</td>
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<td>9630-5</td>
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<tr>
<td>30195</td>
<td>O-desmethyl Venlafaxine</td>
<td>9630-5</td>
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<thead>
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<th>Result LOINC Value</th>
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<tbody>
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