Overview

Useful For
Monitoring citalopram therapy
Identifying noncompliance, although regular blood level monitoring is not indicated in most patients
Identifying states of altered drug metabolism when used in conjunction with CYP2C19 and CYP3A4-5 genotyping

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: 0.5 mL

Collection Instructions:
1. Draw blood before next scheduled dose.
2. 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

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<th>Gross hemolysis</th>
<th>OK</th>
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<tr>
<td>Gross lipemia</td>
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<tr>
<td>Gross icterus</td>
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Specimen Stability Information
Clinical and Interpretive

Clinical Information

Citalopram (Celexa) and S-citalopram (escitalopram, Lexapro) are approved for treatment of depression. Celexa is a racemic mixture containing equal amounts of R- and S-enantiomer. Metabolites of citalopram (N-desmethylicitalopram) are less active than citalopram and do not accumulate in serum to clinically significant concentration.

Citalopram metabolism is carried out by cytochrome P450 (CYP) 2C19 and 3A4-5. CYP 2D6 may play a minor role in citalopram metabolism. Citalopram is known to reduce CYP 2D6 activity. Citalopram clearance is significantly affected by reduced hepatic function, but only slightly by reduced renal function.

A typical Celexa dose administered to an adult is 40-mg per day. A typical Lexapro dose is 20-mg per day. Citalopram is 80% protein bound, and the apparent volume of distribution is 12 L/Kg. Bioavailability is 80% and protein binding is 56% for either form of the drug. Time to peak serum concentration is 4 hours, and the elimination half-life is 35 hours. Half-life is increased in the elderly. Dosage reductions may be necessary for patients who are elderly or have reduced hepatic function.

Reference Values

Citalopram: 50-110 ng/mL

Escitalopram: 15-80 ng/mL

Interpretation

Steady-state serum concentrations associated with optimal response to citalopram are in the range of 50 to 100 ng/mL when the patient is administered the R,S-enantiomeric mixture (Celexa).

The most common toxicities associated with excessive serum concentration are fatigue, impotence, insomnia, and anticholinergic effects. The toxic range for citalopram is greater than 220 ng/mL.

Cautions

Test interpretation requires knowledge of which enantiomers (R, S- or S-) are prescribed; this assay does not distinguish the enantiomers. Flagging is based off of the racemic R,S-enantiomeric citalopram reference range, not the S-enantiomer escitalopram reference range.

Specimens that are obtained from gel tubes are not acceptable.

Clinical Reference


Performance

Method Description

PDF Report
No

Day(s) and Time(s) Test Performed
Monday, Wednesday; 4 p.m.

Analytic Time
1 day

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
80299

LOINC® Information

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