MAYO CLINIC LABORATORIES

Test Definition: PARO

Paroxetine, Serum

Overview

Useful For

Monitoring paroxetine 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 *CYP2D6* 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 (serum gel/SST are **not acceptable**)
Submission Container/Tube: Plastic vial
Specimen Volume: 0.5 mL
Collection Instructions:
1. Draw blood before next scheduled dose.
2. Centrifuge and aliquot serum into plastic vial 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

Gross hemolysis	OK
Gross lipemia	OK
Gross icterus	OK

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Serum Red	Refrigerated (preferred)	28 days	
	Ambient	28 days	
	Frozen	28 days	

Clinical & Interpretive

Clinical Information

Paroxetine (Paxil and Paxil CR) is approved for treatment of depression. Paroxetine is completely absorbed. Metabolites of paroxetine are inactive. Paroxetine metabolism is carried out by cytochrome P450 (CYP) 2D6. Paroxetine can saturate CYP2D6 resulting in a nonlinear relationship between dose and serum concentration. Paroxetine clearance is significantly affected by reduced hepatic function but only slightly by reduced kidney function.

A typical adult paroxetine dose is 20 mg per day. Paroxetine is 100% bioavailable, 95% protein bound, and the apparent volume of distribution is 17 L/kg. Time to peak serum concentration is 5 hours for the regular product and 8 hours for the controlled release product. The elimination half-life is 20 hours. Half-life is prolonged in the elderly and with cirrhosis.

Reference Values

20-65 ng/mL

Interpretation

Steady-state serum concentrations associated with optimal response to paroxetine are in the range of 30 to 120 ng/mL and in the narrower range of 20 to 65 ng/mL.

The most common toxicities associated with excessive serum concentration are asthenia, anticholinergic effects, anxiety, blurred vision, and changes in sexual function. The toxic range for paroxetine is greater than 120 ng/mL.

Cautions

Specimens that are obtained from gel tubes are not acceptable as the drug can absorb on the gel and lead to falsely decreased concentrations.

Clinical Reference

1. Hiemke C, Baumann P, Bergemann N, et al: AGNP consensus guidelines for therapeutic drug monitoring in psychiatry: update 2011. Pharmacopsychiatry. 2011 Sept;44(6):195-235
2. Rifai N, Horvath AR, Wittwer CT, eds: Tietz Textbook of Clinical Chemistry and Molecular Diagnostics. 6th ed. Elsevier; 2018
3. Hiemke C, Bergemann N, Clement HW, et al: Consensus guidelines for therapeutic drug monitoring in neuropsychopharmacology: Update 2017. Pharmacopsychiatry. 2018 Jan;51(1-02):9-62

Performance

Method Description

Paroxetine, citalopram, venlafaxine, and venlafaxine metabolite are extracted from serum by precipitation with acetonitrile. Dilute methanolic hydrochloric acid is added to form a salt to protect analytes from volatilization during the evaporation of the acetonitrile. High-performance liquid chromatography with detection by tandem mass spectrometer is used to measure concentration.(Unpublished Mayo method)

PDF Report

No

Day(s) Performed

Thursday

Report Available

1 to 4 days

Specimen Retention Time

2 weeks

Performing Laboratory Location

Rochester

Fees & 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 account representative. 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. It has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information

80299

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
PARO	Paroxetine, S	9699-0

Result ID	Test Result Name	Result LOINC® Value
83731	Paroxetine, S	9699-0