MAYO CLINIC LABORATORIES

Test Definition: PERAM

Perampanel, Serum

Overview

Useful For

Monitoring serum concentration of perampanel, in specific clinical conditions (ie, severe kidney impairment, mild to moderate hepatic impairment, and end-stage kidney disease)

Assessing compliance

Assessing potential toxicity

Method Name

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

NY State Available

Yes

Specimen

Specimen Type

Serum Red

Specimen Required

Supplies: Sarstedt Aliquot Tube, 5 mL (T914)
Collection Container/Tube:
Preferred: Red top (serum gel/SST is **not acceptable**)
Acceptable: None
Submission Container/Tube: Plastic vial
Specimen Volume: 1 mL
Collection Instructions:
1. Draw blood immediately before next scheduled dose.
2. For sustained-release formulations ONLY, draw blood a minimum of 12 hours after last dose.
3. Within 2 hours of collection, centrifuge and aliquot serum into a plastic vial.

Forms

If not ordering electronically, complete, print, and send 1 of the following forms with the specimen:
-Therapeutics Test Request (T831)
-Neurology Specialty Testing Client Test Request (T732)

Specimen Minimum Volume

0.5 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

Perampanel (Fycompa) is approved for adjunctive therapy to treat primary generalized tonic-clonic seizures in patients aged 12 years and older as well as the treatment of partial-onset seizures with or without secondarily generalized seizures in patients with epilepsy aged 4 years and older.

Reference Values

180-980 ng/mL

Interpretation

The serum concentration should be interpreted in the context of the patient's clinical response and may provide useful information in patients showing poor response or adverse effects, particularly when perampanel is coadministered with other anticonvulsant drugs.

Most individuals display optimal response to perampanel with serum levels of 180 to 980 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. Toxic levels have not been well established. Therapeutic ranges are based on specimen collected at trough (ie, immediately before the next dose).

Cautions

This test cannot be performed on whole blood.

Clinical Reference

1. Reimers A, Berg JA, Burns ML, Brodtkorb E, Johannessen SI, Johannessen Landmark C. Reference ranges for antiepileptic drugs revisited: a practical approach to establish national guidelines. Drug Des Devel Ther. 2018;12:271-280. doi:10.2147/DDDT.S154388

2. Hiemke C, Bergemann N, Clement HW, et al. Consensus guidelines for therapeutic drug monitoring in neuropsychopharmacology: Update 2017. Pharmacopsychiatry. 2018;51(1-02):9-62. doi:10.1055/s-0043-116492

3. Milone MC, Shaw LM. Therapeutic drugs and their management. In: Rifai N, Chiu RWK, Young I, Burnham CAD, Wittwer CT, eds. Tietz Textbook of Laboratory Medicine. 7th ed. Elsevier; 2023:420-453

Performance

Method Description
The serum sample is diluted in acetonitrile internal standard. The protein precipitate is centrifuged, and a portion of the supernatant is diluted with mobile phase for detection by a tandem mass spectrometer.(Unpublished Mayo method)

PDF Report
No

Day(s) Performed
Tuesday, Friday

Report Available
2 to 5 days

Specimen Retention Time
14 days

Performing Laboratory Location
Mayo Clinic Laboratories - Rochester Superior Drive

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
PERAM	Perampanel, S	88895-8

Result ID	Test Result Name	Result LOINC® Value
609438	Perampanel, S	88895-8