Test Definition: FELBA

Felbamate (Felbatol), Serum

Overview

Useful For

Determining whether a poor therapeutic response is attributable to noncompliance or lack of drug effectiveness

Monitoring changes in serum concentrations resulting from interactions with coadministered drugs such as barbiturates and phenytoin

Method Name

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

NY State Available

Yes

Specimen

Specimen Type

Serum

Specimen Required

Supplies: Sarstedt Aliquot Tube 5 mL (T914)
Container/Tube:
Preferred: Red top
Acceptable: Serum gel
Submission Container/Tube: Plastic vial
Specimen Volume: 1 mL
Collection Instructions:
1. Draw blood immediately before next scheduled dose.
2. Within 2 hours of collection, centrifuge the specimen.
3. For red-top tubes, immediately aliquot serum into a plastic vial.
4. For serum-gel tubes, aliquot serum into a plastic vial within 24 hours of collection.

Forms

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

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	Refrigerated (preferred)	28 days	
	Ambient	28 days	
	Frozen	28 days	

Clinical & Interpretive

Clinical Information

Felbamate is an anticonvulsant drug approved for treatment of partial seizures with or without secondary generalization in persons 14 years and older. It is also approved for Lennox-Gastout syndrome in children 2 years and older. Felbamate is well absorbed (>90%) and is metabolized by the hepatic cytochrome P450 system. Metabolites lack anticonvulsant activity. The elimination half-life of felbamate ranges from 16 to 22 hours.

Optimal response to felbamate is seen with serum concentrations between 30 mcg/mL and 80 mcg/mL. Patients who are older adults or have kidney dysfunction may require reduced dosing; felbamate should not be given to individuals with hepatic disease. Toxicity can be severe, including life-threatening aplastic anemia or liver failure; toxic concentration has been established at concentrations greater than 100 mcg/mL.

Coadministration of felbamate increases the concentration of phenytoin and valproic acid, decreases carbamazepine concentration, and increases carbamazepine-10,11-epoxide (its active metabolite). Conversely, coadministration of phenytoin or carbamazepine causes a decrease in felbamate concentration.

Reference Values

30.0-80.0 mcg/mL

Interpretation

Optimal response to felbamate is associated with serum concentrations of 30 mcg/mL to 80 mcg/mL.

Toxic serum concentrations for felbamate have been established at concentrations greater than 100 mcg/mL.

Cautions

No significant cautionary statements

Clinical Reference

1. Johannessen SI, Tomson T. Pharmacokinetic variability of newer antiepileptic drugs: when is monitoring needed? Clin Pharmacokinet. 2006;45(11):1061-1075

2. Schmidt D. Felbamate: successful development of a new compound for the treatment of epilepsy. Epilepsia.

1996;34(Suppl 7):S30-S33
3. Patsalos PN: Antiepileptic drugs-best practice guidelines for therapeutic drug monitoring: a position paper by the subcommission on therapeutic drug monitoring, ILAE Commission on Therapeutic Strategies. Epilepsia. 2008;49(7):1239-1276
4. Milone MC, Shaw LM. Therapeutic Drugs and Their Management. In: Rifai N, Chiu RWK, Young I, Burnham C-AD, Wittwer CT, eds. Tietz Textbook of Laboratory Medicine. 7th ed. Elsevier; 2023:chap 42
5. 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

Performance

Method Description
The serum sample is diluted in an acetonitrile internal standard. The protein precipitate is centrifuged, and a portion of the supernatant is diluted with Mobile Phase 1 for detection by tandem mass spectrometry.(Unpublished Mayo method)

PDF Report
No

Day(s) Performed
Monday, Wednesday, Friday

Report Available
Same day/1 to 3 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

Test Definition: FELBA

Felbamate (Felbatol), Serum

80167

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
FELBA	Felbamate (Felbatol), S	6899-9

Result ID	Test Result Name	Result LOINC® Value
80782	Felbamate (Felbatol), S	6899-9