MAYO CLINIC LABORATORIES

Test Definition: BTBAS

Butabarbital, Serum

Overview

Useful For
Monitoring of butabarbital therapy

Method Name
Gas Chromatography Mass Spectrometry (GC-MS)

NY State Available
Yes

Specimen

Specimen Type
Serum Red

Specimen Required
Supplies: Sarstedt Aliquot Tube, 5 mL (T914)
Collection Container/Tube: Red top (serum gel/SST are **not acceptable**)
Submission Container/Tube: Plastic vial
Specimen Volume: 1.5 mL
Collection Instructions:
1. Draw blood immediately before the next scheduled dose.
2. Within 2 hours of collection, centrifuge and aliquot serum into a plastic vial.

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

Specimen Minimum Volume
0.6 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

Butabarbital is a short to intermediate acting barbiturate derivative that is US Food and Drug Administration-approved for use in insomnia, in preoperative sedation, and as a hypnotic agent. Butabarbital is extensively metabolized and eliminated primarily by renal excretion. The elimination half-life ranges from 34 to 100 hours.

Reference Values

Therapeutic range:
2.0-3.0 mcg/mL Hypnosis
25 mcg/mL Sedation/Sleep
>30 mcg/mL Coma
Toxic concentration: >50 mcg/mL

Cutoff concentrations by gas chromatography mass spectrometry:
Butabarbital: 0.5 mcg/mL

Interpretation

Butabarbital concentrations between 2.0 and 3.0 mcg/mL have been used for hypnosis/sedation with concentrations up to 25 mcg/mL used for sleep. Toxic concentrations have been reported as greater than 50 mcg/mL.

Cautions

The concentration at which toxicity occurs varies, and results should be interpreted in light of the clinical situation.

Specimens collected in serum gel tubes are not acceptable because the drug can absorb on the gel and lead to falsely decreased concentrations.

Clinical Reference

1. Langman LJ, Bechtel LK, Holstege CP. Clinical toxicology. In: Rifai N, Chiu RWK, Young I, Burnham CAD, Wittwer CT, eds. Tietz Textbook of Laboratory Medicine. 7th ed. Elsevier; 2023:chap 43
2. Baselt RC. Disposition of Toxic Drugs and Chemical in Man. 12th ed. Biomedical Publications; 2020
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
4. Mihic SJ, Mayfield J. Hypnotics and sedatives. In: Brunton LL, Knollmann BC, eds. Goodman and Gilman's The Pharmacological Basis of Therapeutics. 14th ed. McGraw-Hill Education; 2023

Performance

Method Description

Barbiturates are extracted from serum using solid-phase extraction techniques. The serum is buffered and eluted with

organic solvent. The organic phase is dried, reconstituted, and the analysis performed by gas chromatography mass spectrometry using selected ion monitoring. The assay utilizes deuterated barbiturates as internal standards.(Unpublished Mayo method)

PDF Report
No

Day(s) Performed
Thursday

Report Available
3 to 9 days

Specimen Retention Time
2 weeks

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
BTBAS	Butabarbital, S	16236-2

Result ID	Test Result Name	Result LOINC® Value
622885	Butabarbital, S	16236-2