
Lab Dept: Chemistry

Test Name: CARBAMAZEPINE LEVEL

General Information

Lab Order Codes: CARB

Synonyms: Tegretol®; Carbtrol®; CB2

CPT Codes: 80156–Carbamazepine; total

Test Includes: Carbamazepine concentration (includes carbamazepine epoxide) reported in ug/mL.

Logistics

Test Indications: Useful for therapeutic drug monitoring (TDM). Carbamazepine is used in the treatment of generalized tonic-clonic, partial-complex seizures.

Lab Testing Sections: Chemistry – Performed on St. Paul Campus

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: Within 2 hours of receipt at St. Paul lab. Please note – additional time required for transport from off site locations.

Special Instructions: N/A

Specimen

Specimen Type: Blood

Container: Green top (Li Heparin) tube **preferred**
Alternate tube: Red, marble or gold top tube

Draw Volume: 0.6 mL blood

Processed Volume: 0.2 mL serum/plasma

Collection: Routine blood collection. Mix tubes containing anticoagulant by gentle inversion.

Special Processing:	Lab Staff: Centrifuge specimen, remove serum/plasma aliquot into plastic sample cup. Analyze sample immediately or store at refrigerated temperatures.
Patient Preparation:	None
Sample Rejection:	Mislabeled or unlabeled specimen

Interpretive

Reference Range: Therapeutic concentration: 4.0 – 8.0 ug/mL

Critical Values: Toxic concentration: >20.0 ug/mL

Limitations: Interfering heterophile antibodies occur at low frequencies in the general population. These antibodies can cause micro-agglutination of the microparticle reagent leading to erroneous result that may be unexpectedly low or unexpectedly high. An erroneous result could lead to incorrect patient management. Test results should not be used in isolation to make patient management decisions. Results should always be assessed in conjunction with the patient's medical history, clinical examinations, and other clinic-pathological findings. An alternative test method should be used to confirm results when results are inconsistent with clinical expectations.

Methodology: Particle Enhance Turbidimetric Inhibition Immunoassay (PETINIA)

References: Abbott Alinity c Carbamazepine Reagent Kit Instructions for Use (September 2019) Abbott Laboratories Diagnostics Division, Abbott Park, IL, 60064, USA

Abbott Alinity c TDM Multiconstituent Calibrator Package Insert (July 2018) Abbott Laboratories Diagnostics Division, Abbott Park, IL, 60064, USA

Bio-Rad Liquichek Immunoassay Plus Package Insert, Bio-Rad Laboratories, Irvine, CA, 92628, USA

Jacobs & DeMott Laboratory Test Handbook (2001) Lexi-Comp, Inc, Hudson, OH, 5th Edition

Bio-Rad Liquichek Unassayed Chemistry Control Product Insert, Bio-Rad Laboratories, Irvine, CA, 92618, USA

Updates: 5/1/2005: Critical range changed, previously reported as >15.0 ug/mL.
2/8/2016: Update alt tube types
12/8/2020: Updated for method Abbott Alinity, removed method Siemens Vista