Client: Example Client ABC123
123 Test Drive
Salt Lake City, UT 84108
UNITED STATES

Physician: Doctor, Example

Patient: Patient, Example

DOB	9/10/1979
Gender:	Female
Patient Identifiers:	01234567890ABCD, 012345
Visit Number (FIN):	01234567890ABCD
Collection Date:	00/00/0000 00:00

Carbamazepine, Free and Total, Serum or Plasma

ARUP test code 2011763

Total Carbamazepine	26.6 ug/mL H	(Ref Interval: 4.0-12.0)

Total drug analysis is used as first line testing to determine adequate dosing. Free drug analysis is used after adequate dosing has been established for the at risk patient (renal, hepatic, protein diseases etc.) to determine the degree of protein binding problems to more specifically adjust dosage.

Free Carbamazepine	9.6 ug/mL H	(Ref Interval: 1.0-3.0)

Percent Free Carbamazepine	36.1 % H	(Ref Interval: 8.0-35.0)

INTERPRETIVE INFORMATION: Carbamazepine, Free and Total, Serum or Plasma

The therapeutic range is based on serum pre-dose (trough) draw at steady-state concentration. Free carbamazepine may be important to monitor in patients with altered or unpredictable protein binding capacity. Carbamazepine is also subject to drug-drug interactions due to displacement of protein binding and extensive metabolism. Cross-reactivity with metabolites may account for differences in carbamazepine among analytical methods. Calculating percent free attempts to minimize differences in assay cross-reactivity and may be useful in dose optimization.

A rare adverse drug reaction to carbamazepine therapy includes Stevens-Johnson syndrome or toxic epidermal necrolysis. Patients of Asian ancestry with the presence of the HLA-B*15:02 have an increased risk for this carbamazepine-induced life-threatening reaction. Pharmacogenetic testing for HLA-B*15:02 is recommended for patients at risk for carbamazepine hypersensitivity prior to treatment. This information has been included in the FDA-approved label for carbamazepine (https://www.accessdata.fda.gov/scripts/cder/daf/index.cfm) and guideline from the Clinical Pharmacogenetics Implementation Consortium (https://www.pharmgkb.org/guidelines) [ARUP test code 2012049, HLA-B*15:02 Genotyping, Carbamazepine Hypersensitivity.] A combination of therapeutic drug monitoring with HLA-B*15:02 pharmacogenetics genotyping may benefit patients who are at increased risk for developing carbamazepine-induced adverse events due to rare genotypes other than HLA-B*15:02 variant allele.

H=High, L=Low, *=Abnormal, C=Critical

VERIFIED/REPORTED DATES

Procedure	Accession	Collected	Received	Verified/Reported
Total Carbamazepine	22-080-102276	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Free Carbamazepine	22-080-102276	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Percent Free Carbamazepine	22-080-102276	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00

END OF CHART

H=High, L=Low, *=Abnormal, C=Critical