



Procedure	Result	Units	Ref Interval	Accession	Collected	Received	Reported/ Verified
Total Carbamazepine	12.4 H	ug/mL	[4.0-12.0]	19-071-900069	12-Mar-19 09:59:00	12-Mar-19 09:59:00	12-Mar-19 10:01:57
Free Carbamazepine	3.1 H	ug/mL	[1.0-3.0]	19-071-900069	12-Mar-19 09:59:00	12-Mar-19 09:59:00	12-Mar-19 10:01:57
Percent Free Carbamazepine	25.0	%	[8.0-35.0]	19-071-900069	12-Mar-19 09:59:00	12-Mar-19 09:59:00	12-Mar-19 10:01:57

12-Mar-19 09:59:00 Percent Free Carbamazepine:
 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?event=overview.process&varApplNo=016608>) 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.

* Abnormal, # = Corrected, C = Critical, f = Footnote, H = High, L = Low, t = Interpretive Text, @ = Reference Lab