

## Overview

### Useful For

Monitoring trimipramine concentration during therapy

Evaluating potential trimipramine toxicity

May aid in evaluating patient compliance

### Method Name

Liquid Chromatography Tandem Mass Spectrometry (LC-MS/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 mL

### Collection Instructions:

1. Collect specimen immediately before next scheduled dose (minimum 12 hours after last dose).
2. Centrifuge and aliquot serum into a plastic vial. **Serum must be separated from cells within 2 hours of collection.**

### Forms

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

### Specimen Minimum Volume

0.25 mL

### Reject Due To

Gross hemolysis	Reject
Gross lipemia	Reject
Gross icterus	Reject

**Specimen Stability Information**

Specimen Type	Temperature	Time	Special Container
Serum Red	Refrigerated (preferred)	28 days	
	Ambient	7 days	
	Frozen	28 days	

**Clinical & Interpretive****Clinical Information**

Trimipramine is a tricyclic antidepressant with additional anxiety-reducing sedative activity. Daily dosages for adults range from 50 mg to 300 mg and are usually divided into 2 to 3 doses per day. Therapeutic ranges are based on serum samples collected at trough (ie, immediately before the next dose). Peak serum concentrations are typically achieved after 1 to 6 hours post dosage.

Common adverse effects include hypotension, tachycardia, constipation, dizziness, somnolence, and blurred vision. Risk of toxicity increases when concentrations exceed 500 ng/mL. Serious adverse effects include coma, seizures, and QRS prolongation with ventricular dysrhythmias.

**Reference Values**

Therapeutic concentration: 150-300 ng/mL

**Note:** Therapeutic ranges are for specimens collected at trough (ie, immediately before next scheduled dose). Levels may be elevated in non-trough specimens.

**Interpretation**

Most individuals display optimal response to trimipramine with serum levels of 150 to 300 ng/mL. Risk of toxicity is increased with trimipramine levels above 500 ng/mL.

Some individuals may respond well outside of this range or may display toxicity within the therapeutic range; thus, interpretation should include clinical evaluation.

Therapeutic ranges are based on specimens collected at trough (ie, immediately before the next dose).

**Cautions**

This test cannot be performed on whole blood. Serum must be separated from cells within 2 hours of collection; if serum is not removed within this time, tricyclic antidepressant levels may be falsely elevated due to drug release from red blood cells.

Specimens that are obtained from gel tubes are not acceptable because the drug can absorb on the gel and lead to falsely decreased concentrations.

Coadministration of fluvoxamine, moclobemide, or quinidine inhibits the metabolism and markedly increases the serum concentrations of trimipramine.

**Clinical Reference**

1. Wille SM, Cooreman SG, Neels HM, Lambert WE. Relevant issues in the monitoring and the toxicology of antidepressants. *Crit Rev Clin Lab Sci.* 2008;45(1):25-89
2. Thanacoody HK, Thomas SHL. Antidepressant poisoning. *Clin Med (Lond).* 2003;3(2):114-118
3. Hiemke C, Bergemann N, Clement HW, et al. Consensus guidelines for therapeutic drug monitoring in neuropsychopharmacology: Update 2017. *Pharmacopsychiatry.* 2018;51(1-01):9-62
4. 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

## Performance

### Method Description

The tricyclic antidepressants are extracted from serum using a solvent to precipitate proteins. The supernatant is removed, and analysis is by liquid chromatography tandem mass spectrometry.(Unpublished Mayo method)

### PDF Report

No

### Day(s) Performed

Monday, Wednesday, Friday

### Report Available

3 to 5 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

80299

**LOINC® Information**

Test ID	Test Order Name	Order LOINC® Value
TRMP	Trimipramine, S	4083-2

Result ID	Test Result Name	Result LOINC® Value
64269	Trimipramine, S	4083-2