**Lab Dept:** Chemistry  

**Test Name:** IMIPRAMINE AND DESIPRAMINE LEVEL

### General Information

- **Lab Order Codes:** IMIP  
- **Synonyms:** Norpramin®, Tofranil®  
- **CPT Codes:**  
  - 80335 – Antidepressants, tricyclic and other cyclicals; 1 or 2  
  - OR  
  - G0480 – Drug, test, definitive (if appropriate)  
- **Test Includes:** Imipramine and Desipramine total concentration, Desipramine only, both reported in ng/mL.

### Logistics

- **Test Indications:** Antidepressant therapeutic drug monitoring, compliance and assessing potential toxicity.  
- **Lab Testing Sections:** Chemistry - Sendouts  
- **Referred to:** Mayo Medical Laboratories (Test: IMIPR)  
- **Phone Numbers:**  
  - MIN Lab: 612-813-6280  
  - STP Lab: 651-220-6550  
- **Test Availability:** Daily, 24 hours  
- **Turnaround Time:** 2 – 4 days  
- **Special Instructions:** Do not use separator tubes for collection. It is recommended that specimens be drawn 12 hours after the last dose.

### Specimen

- **Specimen Type:** Blood  
- **Container:** Red NO GEL tube  
- **Draw Volume:** 3 mL (Minimum: 0.75 mL) blood  
- **Processed Volume:** 1 mL (Minimum: 0.25 mL) serum
**Collection:** Routine venipuncture

**Special Processing:** Lab Staff: Centrifuge specimen, remove serum aliquot into a screw-capped round bottom plastic vial. Serum must be removed from cells within 2 hours of collection. Store and ship at refrigerated temperatures.

**Patient Preparation:** None

**Sample Rejection:** Mislabeled or unlabeled specimens; gross hemolysis; gross lipemia; grossly icteric; drawn in gel tube

### Interpretive

<table>
<thead>
<tr>
<th>Reference Range:</th>
<th>Desipramine: Therapeutic: 100 - 300 ng/mL</th>
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<tr>
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<td>Imipramine and Desipramine: Therapeutic: 175 - 300 ng/mL</td>
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**Interpretation:** Most individuals display optimal response to imipramine when combined serum levels of imipramine and desipramine are between 175-300 ng/mL. Risk of toxicity is increased with levels above 400 ng/mL. Most individuals display optimal response to desipramine with serum levels of 100-300 ng/mL. Risk of toxicity is increased with desipramine levels above 400 ng/mL. Some individuals may respond well outside of these ranges, or may display toxicity within the therapeutic range, thus interpretation should include clinical evaluation. Therapeutic ranges are based on specimen drawn at trough (immediately before the next dose).

**Critical Values:** N/A, see Interpretation comment above

**Limitations:** This test cannot be performed on whole blood. Serum must be separated from cells within 2 hours of drawing; if serum is not removed within this time, tricyclic antidepressant levels may be falsely elevated due to drug release from RBCs. Specimens that are obtained from gel tubes are also not acceptable, as the drug can absorb on the gel and lead to falsely decreased concentrations.

**Methodology:** Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS)

**References:** [Mayo Medical Laboratories](https://www.mayoclinic.org) December 2017
**Updates:**

10/28/2009: Note new reference values. Plasma samples are no longer accepted.
10/25/2012: Toxic level concentrations updated.
1/5/2015: CPT updated