**Lab Dept:** Chemistry  
**Test Name:** THEOPHYLLINE LEVEL  

### General Information

**Lab Order Codes:** THEO  
**Synonyms:** Aminophylline; Theodur; Slo-Bid  
**CPT Codes:** 80198 - Theophylline  
**Test Includes:** Theophylline concentration reported in ug/mL.

### Logistics

**Test Indications:** Theophylline relaxes bronchial smooth muscles to relieve or prevent asthma. Caffeine is a minor metabolite and is often seen in neonates taking theophylline. Peak levels are achieved in 30–90 minutes depending on the compound and type of preparation. The biologic half-life ranges from 3.5 hours in young children to 8–9 hours in adults.

**Lab Testing Sections:** Chemistry (all specimens analyzed on the Mpls Campus)

**Phone Numbers:**  
MIN Lab: 612-813-6280  
STP Lab: 651-220-6550

**Test Availability:** Daily, 24 hours  
**Turnaround Time:** 4 hours  
**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 venipuncture. Mix tubes containing anticoagulant by gentle inversion.
**Special Processing:** Lab Staff: Centrifuge specimen, remove serum/plasma aliquot into a plastic sample cup. Store at refrigerated temperatures.

**Patient Preparation:** None

**Sample Rejection:** Mislabeled or unlabeled specimen

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### Interpretive

**Reference Range:**

| Therapeutic Concentration: | 10 - 20 ug/mL |

**Critical Values:**

| Toxic concentration: | >25 ug/mL |

**Limitations:**

N/A

**Methodology:**

Particle-Enhanced Turbidimetric Inhibition Immunoassay (PETINIA)

**References:**


Siemens Dimension Vista THEO Flex Insert, PIN 781071.00, 11/6/2013, Rev D

**Updates:**

12/22/2011: Turnaround time updated, previously listed as 4 hours.
2/9/2016: Update alt tube type
7/8/2016: TAT update, previously 2 hours