Reverse Triiodothyronine (rT3), LC-MS/MS

**CPT Code:** 84482  
**Order Code:** 1163  
**ABN Requirement:** No  
**Synonyms:** Reverse T3; rT3  
**Specimen:** Serum or EDTA Plasma  
**Volume:** 1.5 mL  
**Minimum Volume:** 1.0 mL  
**Container:**

**Serum:** Gel-barrier tube (Tiger Top)

**Plasma:** EDTA (Lavender Top tube)

**Collection:**

**Serum:**

1. Collect and label sample according to standard protocols.
2. Gently invert tube 5 times immediately after draw. DO NOT SHAKE.
3. Allow blood to clot 30 minutes.
4. Centrifuge at 1300 rcf for 10 minutes.

**EDTA Plasma:**

1. Draw and gently invert 8 to 10 times.
2. Centrifuge immediately for 10 minutes at 1300 RCF at room temperature.
3. Pre-squeeze transfer pipet bulb and draw off approximately 2/3 of the upper plasma layer.
   
   **Note:** This ensures that the buffy coat and red cells remain undisturbed.
4. Aliquot plasma into labeled transport tube labeled as “EDTA plasma” and cap tightly. Discard original tube.
5. Store transport tube refrigerated at 2-8°C until ready to ship.

**Transport:** Store serum or EDTA plasma at 2°C to 8°C after collection and ship the same day per packaging instructions provided with the Cleveland HeartLab,
Inc. shipping box.

**Stability:**

- **Ambient (15-25°C):** 22 days
- **Refrigerated (2-8°C):** 22 days
- **Frozen (-20°C):** 6 months
- **Deep Frozen (-70°C):** 6 months

**Causes for Rejection:** Specimens other than serum or EDTA plasma; hemolyzed specimens; samples not processed properly; samples older than stability limits

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

**Turn Around Time:** 4 to 7 days

**Reference Range:**

<table>
<thead>
<tr>
<th>Age</th>
<th>rT3 (ng/dL)</th>
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</thead>
<tbody>
<tr>
<td>6-12 Months</td>
<td>8.1-52.8</td>
</tr>
<tr>
<td>1-15 Years</td>
<td>8.3-22.9</td>
</tr>
<tr>
<td>≥16 Years</td>
<td>9.2-24.1</td>
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</tbody>
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**Intended Use:** Reverse T3 is typically used when someone is experiencing symptoms of hypothyroidism.

**Clinical Significance:** Typically, T4 (thyroxine) converts to T3, the active thyroid hormone. In some cases, the body conserves energy by converting T4 to rT3 instead. The reverse T3 (rT3) is an inactive form of T3 or Triiodothyronine and it is incapable of delivering oxygen and energy to the cells as T3 does. Production of rT3 is typically triggered when the body is under significant stress, such as prolonged chronic physical or emotional stress, insulin-dependent diabetes, serious injury, acute illness, starvation, prolonged dieting, etc.