

T3, Reverse, LC/MS/MS

CPT Code: 84482

Order Code: 90963

ABN Requirement: No

Synonyms: RT3; rT3; Reverse T3; Reverse Triiodothyronine

Specimen: Serum or EDTA Plasma

Volume: 0.5 mL

Minimum Volume: 0.3 mL

Container:

Preferred:

- **Serum:** Red Top Tube (no gel)

Alternative:

- **Plasma:** EDTA (Lavender Top tube)
- **Serum:** SST (Gel barrier)

Collection:

Serum:

1. Allow blood to clot at room temperature for 30 minutes. Centrifuge and separate the serum from cells immediately.
2. Aliquot serum into transport tube labeled as "Red Top Serum" and cap tightly. Discard original tube.

Note: If a Serum Separator Tube (SST) is used for specimen collection, serum must be separated from the original SST tube and aliquoted into transport tube labeled "SST serum."

EDTA Plasma:

1. Draw and gently invert 8 to 10 times.
2. Centrifuge for 10 minutes.
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.

Transport: Store sample at 2°C to 8°C after collection and ship the same day per packaging instructions included with the provided shipping box.

Stability:

Ambient (15-25°C): 7 days

Refrigerated (2-8°C): 7 days

Frozen (-20°C): 30 days

Causes for Rejection: Samples not processed properly; samples older than stability limits; unseparated serum (>48 hours on clot); serum not separated from the SST gel barrier within 24 hours

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

Turn Around Time: 5 to 6 days

Reference Range:

Age	ng/dL
All Ages	8-25

Clinical Significance: T₃ Reverse, LC/MS/MS - 3,3',5'-Triiodothyronine (reverse T3, rT3) is, along with 3,3,5'-Triiodothyronine (T3) a deiodinated metabolite of thyroxine (T4), the major secretory product of the thyroid gland and is secreted into the bloodstream. Unlike T3, however, rT3 is thought to be metabolically inert.

The process of 5'-monodeiodination that converts T4 to T3, and rT3 to diiodothyronine is inhibited in a wide variety of conditions, collectively referred to as nonthyroidal illnesses (NTI) or the 'euthyroid sick' state. These conditions include fasting, malnutrition, poorly controlled diabetes mellitus, trauma, surgery, and systemic illness. Consequently, in patients with NTI the serum T3 level typically decreases, and the rT3 often, but not always, increases.

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