



TEST: T3, Total

PRINCIPLE:

Triiodothyronine (T3) contributes to the maintenance of the euthyroid state. A decrease in T3 concentration of up to 50% occurs in a variety of clinical situations, including acute and chronic disease. Although T3 results alone cannot be used to diagnose hypothyroidism, T3 concentration may be more sensitive than thyroxine (T4) for hyperthyroidism. Consequently, the total T3 assay can be used in conjunction with other assays to aid in the differential diagnosis of thyroid disease.

T3 is transported in serum primarily by thyroxine-binding globulin (TBG) and approximately 99.5% of circulating T3 is protein-bound. T3 concentrations may be altered in some conditions, such as pregnancy, that affect the capacity of the thyroid hormone-binding proteins. Under such conditions, Free T3 analysis can provide the best estimate of the metabolically active hormone concentration. Alternatively, Free T3 or T4 Indexes (i.e. estimates) can be calculated from the measurement of total T3/ T4 with the results of T3/T4 uptake assays.

SPECIMEN REQUIREMENTS:

2 ml serum from blood collected in red top tube without additive or in a serum separator tube with gel barrier. Separate the serum from the clot to avoid hemolysis: red top tube – transfer serum into plastic transport vial, gel tube – spin. Transport to the lab at room temperature. Store at room temperature for up to 8h, refrigerate for up to 48h. Store frozen at -20°C or below for up to 30 days. Avoid repeated freeze-thaw cycles.

METHOD:

Enhanced Chemiluminescence.

REFERENCES:

1. Larsen PR. Triiodothyronine: Review of Recent Studies on its Physiology and Pathophysiology in Man. *Metabolism*. 21:1073–1092; 1972.
2. Evered DC. Diseases of the Thyroid Gland. *Clinics in Endocrinology and Metabolism*. 3:425–450; 1974.
3. Tunbridge WMG, Hall R. Thyroid Function in Pregnancy. *Clinics in Obstetrics and Gynecology*. 2:381–393; 1975.

Normal Range: 0.87–1.78 ng/ml

Turnaround Time: 3 days