TEST: T4, TOTAL

PRINCIPLE:
The measurement of Total T4 aids in the differential diagnosis of thyroid disease. Thyroxine accounts for at least 90% of circulating protein-bound iodine. While >99.9% of T4 is protein-bound, primarily to thyroxine-binding globulin (TBG), it is the free fraction that is biologically active. In most patients, the total T4 concentration is a good indicator of thyroid status. Diagnostic efficiency, however, may be improved by use of a total T4 assay in conjunction with other assays. T4 concentrations may be altered in some conditions, such as pregnancy, that affect the capacity of the thyroid hormone-binding proteins. Under such conditions, free T4 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:
2ml serum collected in a red top tube with no additive or in a serum separator tube (gel barrier). Serum should be separated from the clot as soon as possible to avoid hemolysis. Store/transport sample at room temperature (15-30°C) for no longer than 8 hours or at 2-8°C for up 48 hours. If testing is further delayed, sera should be frozen at -20°C or lower. Avoid repeat freeze-thaw cycles.

METHOD: Enhanced Chemiluminescence

REFERENCES:

Normal Range: 6.09–12.23 μg/dl

Turnaround Time: 3 days