mean C.V. of 95.8%. Two ways of serum storing were compared. A series of sera was freezeed and stored in glass tubes for 30 days. Another series of the same sera in a small test volume (0.05 ml) were freezeed and stored in polyethylene tubes (provided in the test kit) for the same period of time. No difference was found between these two, and it might be convenient to run the test by the latter storing method.

The T₄ value of normal subjects ranged 6.43 to 12.47 µg/dl, and they are clearly separated from those of hyper- and hypothyroid patients. A good correlation was observed between T₄ RIA values and Res-O-mat T₄ values (r = 0.91).

The T₄ RIA test needs only 0.05 ml of serum, can easily and simply be carried out with good precision. This might be superior to the CPBA method in determining serum T₄ value.

Serum Thyroxine Level by T₄ RIA Kit

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The basic condition and clinical usefulness for thyroxine radio-immunoassay kit were examined. T₄ RIA kit (Dainabot RI Co.) and RIA-Mat T₄ kit (Daiichi RI Co.) were employed in this study.

Thirty-five normal euthyroid subjects, forty-eight patients with hyperthyroidism and twenty-five patients with hypothyroidism were investigated.

Result: The absorption of free thyroxine to resin sponge or strip resulted in progressive increases in the course of incubation time on the both kits. On T₄ RIA kit, resin sponge uptake resulted in slight progressive increases with the increase in incubation temperature.

Cross-reactivity of antiserum with triiodothyronine, monoiodotyrosine and diiodotyrosine were appeared only a very little. Coefficient of variation on intraassay and interassay were less than 10%.

Coefficient of correlation on PBI and thyroxine level by CPBA method were r=0.9, and on the level of RT3U were r=0.7–0.9.

The mean serum thyroxine level in normal euthyroid subjects was 7.4 µg/100 ml±1.8 (SD) on T₄ RIA kit and 7.2 µg/100 ml±1.5 on RIA-Mat T₄ kit. Euthyroid subjects indicated values which range from a low of 5.1 and 4.6 µg/100 ml to a high of 12.0 and 11.0 µg/100 ml on the T₄ RIA kit and RIA-Mat T₄ kit, respectively.

The mean thyroxine level in hyperthyroid patients was 21.3 µg/100 ml±5.4 on T₄ RIA kit 23.1 µg/100 ml±6.7 on RIA-Mat T₄ kit. The mean thyroxine level in hypothyroid patients was 2.7 µg/100 ml±1.5 on T₄ RIA kit and 3.5 µg/100 ml±1.2 on RIA-Mat T₄ kit.

The values of both T₄ kit did not appear to overlap between hyper- and hypothyroid patients and normals.