Our Experience Using T_3 RIA KIT (PEG Method)

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Measuring T_3 (triiodothyronine) in the blood is rapidly becoming a common and indispensable clinical procedure. We had the opportunity to use the T_3 RIA KIT developed by Dinabott RI laboratry. This kit uses polyethyren-glycol (PEG) to separate antibody combined with hormone labeled RI from isolated hormone labeled RI. We intend to report the foundermental and clinical findings that we obtained with this kit.

(Object and Methods)

Foundermental Examination—In accordance with standard measuring method, we examined the time and temperature of incubation, and the influence of light. We also tested diluted T_3 high concentration serum, its recovery and its ability to reappear.

Clinical Examination—We measured T_3 in serum taken from 58 patients who have various thyroid diseases, 9 pregnancies, 3 nephrosis, and 33 healthy persons by means of this method. We then also measured T_3 in all these cases by means of the usual T_3 RIA KIT (dextran-charcoal method) and compared the results obtained from both.

(Results)

We obtained a good standard curve which was taken after 2 hours of incubation at 25°C, and made these our assay condition. The dilution curve of T_3 high concentration serum run parallel to the standard curve. When we added standard 0.25–4.00 ng/m*l* of T_3 to the pooled serum, the rate of recovery was 87–120%, 98.6% on the average. In healthy persons, the amount of T_3 in serum was 1.20–1.73 ng/m*l*, 1.44 ± 0.15 ng/m*l* on the average; in hyperthyroidism patients, 2.65–8.00 ng/m*l*; in hypothyroidism patients, 0.09–1.14 ng/m*l*; in pregnancies, 1.05–1.98 ng/m*l*; in patients with nephrosis, 1.30–1.85 ng/m*l*. The correlation coefficient of the T_3 of the dextran-charcoal method and T_3 of the PEG method was $\gamma = 0.927$. This means that these correlate very well.

This new method is simple and can be performed quickly. For these reasons, we think this method is very useful to measure T_3 in serum.

Radioimmunoassay for Measurement of Triiodothyrorine and Thyroxine in Human Serum

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Our experience with radioimmunoassay (RIA) used for measuring serum triiodothyrorine (T3) and thyroxine (T4) is reported. The method has good specificity for T3, T4 and its reproducibility is satisfactory. RIA T3 values ranged from 0.80 to 2.14 ng/m*l* (1.30 ± 0.31) in normal adults. RIA T4 values ranged from 4.7 to 14.7 μg/100 m*l* (9.4 ± 2.7) in 50 normals cases.

In all clinical states, serum T3 values obtained by RIA afforded excellent agreement (correlation coefficient -0.91) with those obtained by triiodothyrorine binding globulin index-thyopac 3. Serum T4 values obtained by RIA affored excellent agreement (correlation coefficient 0.91) with those obtained by competive protein binding assay-thyopac 4.

Hemolystic serum are light higher than normal serum between the two techniques.

Advantages of the method over commercially available RIA kits or CPBA and TBG-index are outlined.