Our Experience With the Use of the Seralute Total T₃ RIA Kit

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We examined the Seralute Total T₃ RIA Kit (developed by the Ames Company to measure total triiodothyronine (T₃) in serum) in order to evaluate its clinical usefulness. We conducted the examination in accordance with the instructions listed. Cross reactivity of this antibody with T₄ was estimated as only 0.44%. The serum dilution curve was strikingly parallel to the standard curve, and the recovery of added standard T₃ to serum as the amount of 68–540 ng/dl was 88.2–109%. Coefficient variation for serum T₃ determination was 4.1% in interassay, and was 5.9% in intraassay respectively. We were very pleased with the results.

The concentration of serum T₃ in 24 normal adults was ranged from 117 to 214 ng/dl and averaged in 157±23 ng/dl, while in 13 patients with hyperthyroidism ranged from 297 to 884 ng/dl and averaged in 624±167 ng/dl, in 9 patients with hypothyroidism ranged from 0 to 63 ng/dl and averaged in 25±18 ng/dl, and in 6 pregnant women ranged from 167 to 237 ng/dl and averaged in 214±27 ng/dl.

When we used this kit, the value of serum T₃ reflected the functioning of the various thyroid diseases. When we compared this method with the T₃ RIA kit of the Dinabot R1 Laboratory, the concentration of T₄ of 24 normal adults was 1.30±0.19 ng/ml, and this means that the values obtained with the Seralute Kit were higher than those obtained with the Dinabot Kit, but the significant correlation was found between the results of each kit with the correlation rate of 0.91.

The measurement of serum T₃ by means of this Seralute Kit was clinically very useful because the amount was very stable and we needed but a short time to conduct the assay.

The Deviation of The In Vitro Thyroid Function Tests in Japan
—Analysis of The Dose Response Curves of T₃ and TSH Radioimmunoassays—

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In the previous study, the result of the control survey of serum T₃ and TSH measurements in various laboratories in Japan were investigated, showing that deviations among laboratories were much greater than the interassay variations in a given laboratory.

In order to analyze the causes of the deviations, we compared the T₃ and TSH dose response curves