

LABORATORY AND CLINICAL TEST OF SPAC T₃ UPTAKE KITS AND SPAC T₄RIA KITS.

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Technical simplicity and accuracy of the radioassay were evaluated concerning measurement of both serum T₃ Uptake with SPAC T₃ RIA Kits, and serum T₄ with SPAC T₄ RIA Kits. Both Kits appear to have the distinct advantages of simplicity, in spite of minute serum volume (25 micro liter) needed, over the previous other assay Kits. The results of serum T₃ Uptake measurements showed not only well correlations with those of Triosorb Test (r=0.89), but also a good coefficient of variation for the same serum (5.7% for inter-assay and 6.7% for intra-assay) when assay condition was accurately regulated. However, the incubation at higher temperature brought increased values for hypothyroid serum but did decreased one for hyperthyroid serum. The results of measurement of serum T₄ also showed well correlation with those of Res-O-Mat T₄ Kits (r=0.88) and Tetra-Tab RIA Kits (r=0.99), and a well co-efficient of variation for the same serum (8.2% for inter-assay and 9.2% for intra-assay). The recovery test, performed by adding 0 to 40 microgram of T₄ per deci-liter of hypothyroid serum, gave excellent co-efficient of variation 100.4 ± 7.4%. The T₄ values also correlated well with clinical state of patient.

FUNDAMENTAL AND CLINICAL EVALUATION OF SPAC T₃ AND T₄ KITS

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Recently unique solid-phase in vitro radioassay kits for unsaturated TBG capacity and serum T₄ concentration were developed, and they were evaluated fundamentally and clinically.

As to SPAC T₃, binding affinity and capacity of the precoated anti T₃ was studied, and values of 1.4×10^{-10} M and 6.2×10^9 M⁻¹ were obtained, respectively. Intra assay and inter assay variability were 3.2 % and 6.49%, respectively. As to the incubation condition, 25°C for 1 hr appeared to be suitable.

Washing of tubes caused significant reduction of the bound counts, however this did not affect significantly the SPAC T₃ values.

SPAC T₃ values in 26 normal subjects were 0.99 ± 0.08 , and those in various conditions well reflected their clinical conditions, further those in 53 cases showed a good correlation (r=0.910, Y=0.028X + 0.348) with Triosorb M values.

SPAC T₄ kits were found to have the least detectability of 0.25 µg/100ml T₄ in the serum. Intra and inter assay variability were 8.6% and 9.18%, respectively. Incubations of 37°C at 2hr were found favorable but indicated 1hr incubations also gave satisfactory results.

Measured T₄ by SPAC in 32 normal subjects were 8.3 ± 1.53 , and hyper- or hypothyroid patients were clearly separated from normal range. SPAC T₄ values in 52 cases showed a good correlation (r=0.969, Y=0.964X - 0.454) with T₄ RIA (Dinabot).

Free T₄ indices calculated by SPAC T₃ x T₄ in 20 were quite well correlated with those by Triosorb M x T₄ (RIA).

SPAC methods were considered as very useful routine tests, especially in their simplicity of the procedure and their little requirement of the test samples.