

EVALUATION OF T₃ UPTAKE INDEX USING T₃ ANTIBODY (SPAC T₃)

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Basic and clinical evaluation on new method of T₃ uptake test was performed.

SPAC T₃ Uptake Kit consists of antibody tubes in which certain amount of T₃ antibody was coated, 125-I-T₃ solution and standard serum sample.

Bound percent of 125-I-T₃ to the Antibody tube was 32.2% in T₃ free sample, 31.6% in 10 ng/ml of T₃ sample, 30.5% in 20 ng/ml of T₃ and 30.1% in 30 ng/ml of T₃ sample. T₃ Uptake Index by this method was not affected by the addition of 1 µg/ml of T₃ to serum sample.

Optimal incubation time for this kit was from 15 to 60 minutes. Coefficiency of variance of T₃ Uptake Index by decaplicate assay varied from 5 to 9.1%.

T₃ Uptake Index was 0.99 ± 0.01 in 61 normal, 1.59 ± 0.10 in 16 hyperthyroidism, 0.74 ± 0.02 in 18 hypothyroidism, 1.01 ± 0.03 in 22 chronic thyroiditis, 1.03 ± 0.06 in 9 simple goiter, 0.88 ± 0.66 in 8 thyroid adenoma, 0.88 ± 0.55 in 14 normal pregnant women.

T₃ Uptake Index was well correlated with Res-O-mat T₃ ($r = -0.7253$, $n = 133$) and Triosorb ($r = 0.8348$, $n = 53$).

From above data, SPAC T₃ Uptake kit is well designed T₃ uptake kit for clinical use.

STUDIES ON SPAC T₃ UPTAKE KIT FOR THE MEASUREMENT OF THYROID HORMON

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Basic and clinical studies are performed to evaluate Spac T₃ uptake kit which is one of solid phase radioimmunoassay kits. Material and method; The effects of incubation time and temperature as well as serum volume and washing time on the value of T₃ uptake are examined. Repeatability and reproducibility of T₃ uptake are measured. Clinically T₃ uptake are calculated in the patients with various thyroid diseases and the values which are obtained by Spac kit are compared with those by other kits, such as Resomat T₃ kit and Konsul T₃ uptake kit. Results; On the patients with hyperthyroid, the value of T₃ uptake decreased with increased incubation time and on hypothyroid it increased. It is necessary to keep strictly determined incubation time (30-60 min). As for the incubation temperature, T₃ uptake on hyperthyroid decreased with increased incubation temperature and increased on hypothyroid. Influences of the serum volume and the washing times on T₃ uptake values were not found. The coefficients of variation for intraassay were 2.74 - 3.70% and for interassay were 3.04 - 4.08%, respectively.

The mean T₃ uptake index by this method in normal human serum, hyperthyroid serum and hypothyroid serum were 1.01 ± 0.07 (m±SD, $n = 33$), 1.44 ± 0.11 (m±SD, $n = 20$) and 0.77 ± 0.05 (m±SD, $n = 4$) respectively. Good correlation between T₃ uptake index by Spac kit and Konsul kit were obtained. ($r = +0.979$ $Y = 0.90X + 3.89$) And Correlation between T₃ uptake Index by Spac and TBC Index by Resomat showed good correlation ($r = -0.957$ $Y = -0.80 X + 1.82$).