

FUNDAMENTAL STUDY OF SPAC T₄Hiroshi Iwasaki, Satoshi Hakariya

Faculty of Radiology, Nagasaki University

(Purpose)

At the time of Thyroxine level determination in blood by RIA method, the double antibody or PEG method has been widely adopted for B-F separation.

We have tried a new determination method this time. In this new method we could save one-time dispensation process and one-time centrifugation process for B-F separation compared to the conventional methods because the antibody has been coated to the test tubes.

For the clinical use of SPAC T₄ RIA kit whose process is easier and more simplified compared to the conventional methods.

(Result)

(1) 30min. incubation was not sufficient. A good standard curve was obtained in case of 60min. or 90min. incubation. Therefore, more than 60min. incubation is necessary.

(2) The desirable incubation temperature was 37°C and 40°C. We performed the incubation at 37°C.

(3) The C.V.s. of intra and inter assays were 6.1 ± 0.39 C.V. 6.4%, 6.3 ± 0.23 C.V. 3.6%.

(4) A good result was obtained in both dilution and recovery determination.

(5) The correlation between the conventional T₄ and SPAC T₄ determination was very good, namely, $Y = 1.04X + 0.29$, $r = 0.97$.

(6) The measured values according to different cases were:

normal--- $8.39 \pm 1.66 \mu\text{g/dl}$

hypothyroidism--- $2.81 \pm 1.36 \mu\text{g/dl}$

hyperthyroidism--- $1.71 \pm 4.23 \mu\text{g/dl}$

(Conclusion)

The results of our examination show that this determination method is superior to the conventional one on the whole in spite of its simplified, easy procedures.

As we are now studying the determination in the case of less than minimum T₄ concentration standard, we will report our finding shortly.

STUDIES ON SPAC T₄ KIT FOR THE MEASUREMENT OF THYROID HORMONShinko Ozaki, Shoji Yoshida, Junichi Miyazaki and Keiji Ushio

Kochi Prefectural Central Hospital, Kochi

Fundamental and clinical studies were performed to evaluate the Spac T₄ Kit for the T₄ Radioimmunoassay.

Following results were obtained.

Bound % within 30 min. of incubation time was still low and it increased as the incubation time increased. Over 30 min. of incubation time was desirable. Good dilution test and recovery of T₄ were recognized. The cross reactivities to MIT, DIT and thyroglobulin were not observed. Slight cross reaction to T₃ was recognized.

The coefficients of variation for intraassay were 3.34 %- 6.30 % and for interassay were 1.96%-13.10 % respectively. Mean T₄ values by this method in normal human serum, hyperthyroid serum and hypothyroid serum were 8.79 ± 1.66 (m±SD), 22.41 ± 7.59 (m±SD) and 1.20 ± 0.75 (m±SD) respectively.

Correlation between T₄ values by Spac kit and by other methods showed good correlation such as $r = 0.88$ with Tetrasorb, $r = 0.96$ with T₄ RIAKIT II, $r = 0.95$ with T₄ PEG RIA PAC, $r = 0.96$ with Thyrotest RIA 4 and $r = 0.98$ with Konsul T₄.

Simplified assay procedure using solid phase method and above described good results of Spac T₄ kit showed that this was highly evaluated RIA method to measure serum T₄ values.