

EVALUATION OF SOLID PHASE T_4 -RIA (SPAC T_4 -RIA)

Yoshiharu Murata*, Yasushi Ikeda**, Noriyuki Nihei** and Syumatsu Wanibe***

*Ensyu General Hospital, **Third Internal Medicine Hamamatsu Univ. *** First Internal Medicine Nagoya Univ.

This study presents the usefulness of new T_4 -RIA kit (SPAC T_4 -RIA). Tubes used in this kit are coated by T_4 antibody.

In this study we examined the procedure, reproducibility and the specificity of antibody which is used in this kit.

Serum T_4 concentrations of 217 cases including 74 normal subjects and various thyroid diseases were measured by this method. T_4 values by this method was compared with those measured by CPBA, double antibody technique, another type of solid phase method.

The cross-immunoreactivity of this antibody between MIT, DIT, T_3 , and rT_3 was observed to be negligible. B/T% was increased gradually in incubation at 37.0°C by 60 minutes but came to be plateau there after. We recognized that this kit could be used at room temperature in 90 minutes' incubation. Standard curve showed dose response to T_4 concentration (2.0-40ug/dl), and paralleled dilution curve of high T_4 concentration serum. Both recovery and reproducibility studies were admitted to be excellent.

Means (\pm SE) of serum T_4 concentrations by this method were 8.0 ± 0.2 ug/dl in normal and the normal range was computerized as 5.0-12 ug/dl. T_4 concentrations were 16.7 ± 1.0 ug/dl in 18 hyperthyroidism, 3.0 ± 0.3 ug/dl in 14 hypothyroidism, 8.7 ± 1.9 ug/dl in 9 simple goiter, 8.4 ± 0.9 ug/dl in thyroid adenoma, and 7.0 ± 0.7 ug/dl in pregnant women. T_4 concentration by this method showed significant correlation between those measured by double antibody technique, CPBA, and another solid phase method respectively. Among these solid phase method similar to our technique showed most excellent correlation.

It was concluded that this method is excellent to measure T_4 concentrations in serum.

BASIC AND CLINICAL ASSESSMENT OF THE SPAC T_4 RIA KIT

Makoto Miyoshi, Yoshihiko Oshiumi, Chikashi Nakayama, Itsuma Kamoi, Miho Abe and Keiichi Matsuura

Department of Radiology, Faculty of Medicine, Kyushu University

Recently, SPAC T_4 RIA test, one of the in vitro thyroid tests was developed. Basic and clinical investigation was evaluated.

In basic experiments, the standard curve did not vary by incubation time between 30 to 70 minutes.

In various thyroid functions, the reproducibility of intraassay and interassay was satisfactory.

Satisfactory data was also obtained in dilution tests between 2 to 40 μ g/dl.

The retrieval test revealed 90 to 96%.

In clinical examinations, there was good correlation between SPAC T_4 and RIA MAT T_4 .

The normal values of SPAC T_4 ranged between 3.1 to 12.6 μ g/dl.