2) The mean and standard deviation in each group are listed below:

euthyroid	8.6±2.9 mcg/100 ml
hyperthyroid	20.9±7.1 mcg/100 ml
hypothyroid	6.9±1.2 mcg/100 ml
nontoxic goiter	9.3±3.2 mcg/100 ml
pregnancy	9.8±1.3 mcg/100 ml

3) The results were compared with other thyroid function tests and the following coefficients of correlation were obtained:

BMR	$r=0.59$ $(P<0.001)$
PBI	$r=0.73$ $(P<0.01)$
β-glucuronidase activity	$r=0.70$ $(P<0.001)$
T_3 RSU	$r=0.41$ $(P<0.01)$
Tetrasorb-125 Kit	$r=0.75$ $(P<0.001)$

4) From these results it is concluded that this test is sufficiently reliable in estimating the functional states of the thyroid.

Determination of Serum Thyroxine Using Res-O-Mat T_4 Kit

H. Mori and K. Hisada

Division of Nuclear Medicine, Department of Radiology, Kanazawa University, Kanazawa

A. Ando

Radiation Technician School Affiliated with Kanazawa University, Kanazawa

Some fundamental and clinical experiments were performed in the determination of serum thyroxine by competive protein binding analysis using Res-O-Mat T_4 Kit.

Variation of radioactivity in each vial was very small.

Res-O-Mat T_4 value was not influenced by the length of mixing time on a vertex mixer.

It was desirable to centrifuge at 2500 rpm for 5 minutes, but it does not appear that it needs to centrifuge exactly so.

At 15°C and 30°C, Res-O-Mat T_4 value was greatly influenced by the length of incubation period and the standard curve was not useful. Therefore, it was required to measure at relatively constant room temperature between 20°C to 25°C.

Neither radioactive nor non-radioactive iodine was proved to affect this test, since the alcohol-extract of serum was not contaminated by radioactive iodine.

Therefore, this test can be done even after administration of ^{131}I-NaI, while triosorb test is impossible to be performed under such a condition.

As there was a good correlation between 0.3 ml and 0.2 ml of alcohol-extract, we decided to use alcohol extract of 0.2 ml instead of 0.3 ml in hyperthyroidism and as a result we were able to measure thyroxine level up to 27 μg%.

Res-O-Mat T_4 test showed remarkably less overlapped data among hyperthyroid, euthyroid and hypothyroid conditions than triosorb test.

T_7 value was a more accurate diagnostic aid than Res-O-Mat T_4 or triosorb test alone in various thyroid diseases.

These results proved that Res-O-Mat T_4 test could be used as a routine clinical diagnostic test.