interpretation of the values obtained by RIA.
Possible relation of anti-T₃ antibody in Case 5
to latent hypothyroid state of this patient was
also discussed.

Comparison of TSH Receptor Assays

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There have been reported two representative
methods for TSH receptor assays by Amir et al.
(J.B.C., 1973) and by Smith et al. (FEBS Letters,
1974) after Manley (J. Endocr., 1974). However,
these two methods are quite different from each
other in both assay conditions and results of
assays on the sensitivity to cold TSH and on the
effects of IgGs from patients with Graves’ dis-
ease. In order to observe what factor was the
most responsible for these discrepancies between
the two methods, this study was performed using
the preparations prepared as described in the
original reports from the same materials (e.g.
receptor, tracer, cold hormone, IgG). Under
the original condition, the displacement of ¹²³I-TSH
by the cold TSH was as sensitive as that in the
original report in each assay. Many IgGs from the
patients with Graves’ disease showed stronger
displacements than those from normals in Smith’s
method. However, both IgGs displaced the ¹²³I-
TSH to the same extents in Amir’s method despite
of the use of same IgG preparations. Any altera-
tions of incubation temperature, incubation time
and pH resulted in decrease in binding and sensi-
tivity in each assay. The degradation of ¹²³I-TSH
during incubation or the amount of solubilized
receptors in the incubation medium was negligible
in both methods. Substitution of one receptor for
another did not influence the results in each assay.
Similarly, substitution of Smith’s tracer for Amir’s
did not change the sensitivity or IgG’s effect in
Amir’s assay. These results suggest that either
methods to prepare receptors or degradations of
labelled TSH are not responsible for the differences
between the two assays. The combination of puri-
fied tracer and incubation conditions seems to be
important to increase the sensitivity of TSH recep-
tor assays.

Studies on the Radioreceptor Assay of TSH
—TBII in Patients Treated with Radioiodide for Hyperthyroidism—

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By using the radioreceptor assay of TSH, some
IgG from patients with Graves’ disease have been
shown to inhibit the binding of labelled TSH to
its receptor sites. These IgG, called TSH-binding
inhibitor immunoglobulins (TBII), were detected in
60% of untreated Graves’ patients. In this study
TBII were measured in 51 patients who had been
treated with radioiodide (¹³¹I, 4–10 mCi) 4 to 17
years before.
The incidence of TBII was 20%. In still thyro-
toxic patients (10 cases) TBII were detected more
frequently (80%) and LATS activity was positive
in 20%. However, the incidence of TBII in hypo-
thyroid (12 cases )or euthyroid (29 cases) patients
were very low of 5%. Furthermore the activities
of TBII in these patients were not so potent as in
thyrotoxic patients. This result may indicate that
the measurement of TBII in patients treated with
radioiodide is useful for checking the results of
treatment.