TSH and HCG were removed by 75% into greater amounts of D.C.C. solution (2 ml) under 1 ml of pooled serum.

In this treatment of D.C.C. solution, serum albumin was removed slightly into charcoal.

The standard curve of radioimmunoassay for TSH and GH was figured using the panhypopituitary patient serum (PPS) or PPS treated by D.C.C.. The standard curve of TSH or GH using PPS did not changed remarkably from that of PPS treated by D.C.C.

The hormone-free serum that was made by D.C.C. treatment is available to use as the standard serum for the double antibody radioimmunoassay of these hormones.

Characteristics of Solid-state Competitive Binding Radioassay Using Disposable Microtiter Plate

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We had originally developed rapid, sensitive and specific solid-state competitive binding radioassay method using disposable plastic microtiter plate (J Clin Endocr 31:119, 1970). This technique had been applied widely and from various experiences characteristics of the method were demonstrated. Simplicity was the greatest advantage, and B and F separation could be easily and perfectly achieved by washing plate with tapped water. Damaged material did not affect the separation. Economy and rapidness also favored for its routine application. Sensitivity of the method was usally exellent, for example in TSH assay, approximately 3 times more sensitive assay and sharper standard curve were brought by this method than by double antibody method. On the other hand, high variability in indivisual assay point was one of undesirable problems. Coefficient of variance usually ranged from 10 to 15%. Therefore, triplicated assay for each point seemed necessary. High antibody concentration was also required in this system, but repeated usage for at least 5 times might save the consumption. The volume of incubation mixture was so small (0.25 ml) and number of binding sites of precoated antibody was so limited that the quality and quantity of protein in the system greatly influenced the antigen-antibody binding and addition of suitable carrier protein in the standard system was highly desirable.

In conclusion, lack of precision should not be overlooked but simplicity and high sensitivity might cover enough over this disadvantage, and solid-state radioassay seemed to have wide future. Addition to these, the technique was demonstrated useful for circulating antibody determination and two-step radioassay for materials which might coexist with antibody and for materials which lose immunological activity by radioiodination also.