tion. A little amount of IRG was detected in corpus of the stomach, ileum and pancreas. It was, however, interesting that the abundant IRG was detected in corpus of the stomach from a patient with pernicious anemia.

Distribution of big G (BG, Yalow & Berson) and little G (LG) in boiled extracts of gastrointestinal mucosa were studied by use of Sephadex G-50 gel filtration and starch gel electrophoresis. LG distributed mainly in the antral mucosa of the stomach (88.4%), and decreased towards distal portion of the duodenum. In contrast, BG increased gradually to the distal part; 53.4% of BG being found in the duodenal 3rd portion.

The similar studies on changes of IRG patterns of sera following intragastric acidification and subsequent alkalization were carried out in a patient with pernicious anemia. Major component of serum IRG before stimulation was confirmed to be BG. After the acidification, BG decreased, but LG and IRG of smaller molecule than LG appeared. After the alkalization BG increased again and LG and smaller IRG disappeared.

These findings suggested that the molecular forms and distribution of IRG in sera and tissues may be closely related to release mechanism of gastrin.

In the present report, IRG patterens determined by CIS-gastrin kit and Dainabot gastrin kit were also compared with that obtained by double antibody method.

Simultaneous Determination for HB Antigen and Antibody by RIA Method

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The RIA methods for detecting the HB antigen or antibody have been reported by several research groups. The solid-phase (SP) RIA method which has recently been developed by Abbott Laboratories is particularly excellent in sensitivity and reproducibility and has become widely utilized. Furthermore, the development of the antibody SP-RIA method is also required from the standpoint of epidemic researches, but it is not available yet due to the difficulty in purifying HB antibody and contamination of antigen in waste fluid.

In order to remedy all these difficulties, we attempted to work a process of placing antigen into a polyethylene tube of the kit for detecting the HB antigen to form an antibody wall and an antigen wall and to develop the both reactions of antibody/unknown antigen/labelled antibody and unknown antibody/antigen/labelled antibody, which process permitted us to determine the antigen and antibody by the SP-RIA method and by taking advantage of those facts that, in the measurement of radioactivity, the cpm value of the antigen group rises and the cpm value of the antibody positive groug falls, which cpm values of antigen antibody negative group and antigen antibody group are invariable.

Our present report describes the principle, the detection method and its results of the simultaneous determination for HB antigen

and antibody by SP-RIA method.

Result:

As the sensitivity in detecting HB antigen and antibody in the present method is found at a level of 90% on the base of the sensibility in the SP-RIA method and the PHA method for the detection of HB antigen, our method is believed to have a great value for future application in the clinical field.

Investigations on the Measurement of Serum Vitamin B_{12} Values by Radioassay Method

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Vitamin B_{12} levels in the serum has an important role for the diagnosis of hematological disease. Determination of serum vitamine B_{12} values has became much easier since radioassay kit for this purpose can be available instead of microbiological assay.

Determination of serum B_{12} values was performed using phadebas B_{12} Kit of pharmacia Co. Ltd. and the conditions to get accurate measurement were investigated.

Serum B_{12} levels of same serum measured by different kits were distributed within $\pm 15\%$ of mean value. The reasons which were resulted such widely distribution of the values, was investigated.

There was a moderately differences between the shape of standard curves obtained from different kits. This might result a relative large variation of vitamin B_{12} values because the abscissa are plotted by log scale. Especially, in the area of high concentration of B_{12}, slight difference of standard curve makes a large change of B_{12} value compared with that in the area of low concentration. From this result, it was dicided that 0.5ml of extracted and diluted serum was used instead of 1.0ml of it.

Percent radioactivity of each sample against zero sample was measured on eight samples from same serum. Each B_{12} values were evaluated from three different methods and the variation of these values by each method were compared.

Percent values for the counts on various B_{12} concentrations against zero sample were plotted on a lin-log paper (a) or plotted on a logit-log paper (b). Using the percent of radioactivity from unknown sample against zero sample, B_{12} values of the sample was read directly by the standard curve (a) or was read from the logit transformed value on the standard line (b).

Two differnt volume of unknown sample were assayed and logit transformed value of them were plotted on a logit-log paper with B_{12} standards. The combined slope of them was calculated and the relative potency of the sample was evaluated from the slope using a computer (c).

There were a few differences on the