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A NEW PROCEDURE FOR COUPLING ANTIBODY TO PAPER DISCS TO BE USED IN RADIOIMMUNOASSAY. APPLICATION TO THE DETERMINATION OF AFP. T.Sasaki and H.Hirai. Hokkaido University School of Medicine. Sapporo.

CM-cellulose paper discs were used as the solid-phase in the radioimmunoassay of AFP. The discs activated with carbodiimide (CDI) were covalently linked to anti-AFP. In order to avoid the crosslinking of antibody proteins, the discs activated with CDI under acidic conditions were then reacted with the proteins at pH8.0. These antibody-coated discs were used for the determination of AFP levels and the values were compared with those obtained using the BrCN-activated paper discs coupled with antibody. A good correlation of both methods was observed. The results suggest that solid-phase radioimmunoassays using CDI activated CM-cellulose paper discs coupled to antibody can also be utilized as an assay method for AFP. The method we are proposing has advantages over the use of the BrCN activation methods. The latter method suffers from gradual leakage of immobilized proteins and somewhat hazardous activation.

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CLINICAL EVALUATION OF SERUM PROSTATIC ACID PHOSPHATASE VALUE BY RADIOIMMUNOASSAY. Y.Higashi, T.Machida, M.Miki, Y.Ohishi, M.Yanagisawa and H.Kurauchi. Department of Urology, The Jikei University School of Medicine.Tokyo.

PAP-RIA (Radioimmunoassay for PAP) was developed and reported in the 20th annual meeting of Japanese Society of Nuclear Medicine in 1980. Three thousand samples in 1200 patients were measured by PAP-RIA and clinical evaluation of the PAP level were studied, especially, in 65 cases of non-treated prostatic cancer. Eighty two percent of patients with prostatic cancer (42% in stage 1, 96% in stage 2, 85% in stage 3, 100% in stage 4) had elevated levels of PAP.

In contrast to the enzyme assay, the RIA technique was more efficient for the detection of prostatic cancer. The level of serum PAP measured by RIA correlated with the condition of disease. The way of following up study by PAP-RIA was reported.

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DETERMINATION OF ELASTASE-1 IN VARIOUS DISEASES. A.Toda, M.Suzuki, N.Itsukaichi and T.Suzuki. Morioka Red Cross Hospital.

Because of the higher specificity of elastase-1 for pancreatic diseases than serum amylase, elastase-1 measurement would be valuable in the diagnosis of pancreatic diseases. In the present study, basic evaluation was conducted on using Elastase-1 RIA Kit. Elastase-1 was measured in patients with pancreatitis and various other diseases. Correlation between serum amylase and urinary diastase was studied in patients with chronic pancreatitis or suspected cases. This was compared with CEA in malignant disease. Intraassay error was 4.5-8.6% (CV%). Inter-assay error was 5.5-9.9%. Recovery rate was 87.5-124.0%. Results of measurement in healthy normal subjects was 247 ± 65.5 ng/dl. A significant difference was noted between males and females, between subjects in the 20s and those in the 50s and between 30s and 50s ($p < 0.05$). A correlation coefficient of $r = 0.35$ was noted between elastase-1 and serum amylase. Among 51 patients with malignant disease, serum elastase-1 was higher than 400 ng/dl in 18. In 9 patients, both CEA and elastase-1 were higher than normal. Among 12 patients with pancreatic carcinoma, elastase-1 was higher than 400 ng/dl in 7 while both CEA and elastase-1 gave higher than normal values in 4.

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BASIC AND CLINICAL EVALUATION OF MYOGLOBIN RADIOIMMUNOASSAY KIT "EIKEN". S. Shuichi, Y. Arita, K. Miyazaki and A. Kihara. Sapporo Medical College. Sapporo.

We found that a 24-hours for first incubation time and one-hour for second were satisfactory in this assay kit. A appropriate standard curve was obtained between 31.2 and 250 ng/ml of myoglobin concentrations. Values for serum myoglobin concentration assayed by this system were satisfactory as regards intraassay, interassay, recovery and dilution test. In electrophoresis of I-125 myoglobin with Whatman 3MM paper, 17% of labelled myoglobin migrated with human pooled serum. Three peaks of radioactivities were observed in I-125 myoglobin by sephadex G-100 column chromatography. Using this assay system, serum myoglobin concentrations were evaluated in patients with chronic alcohol intake. A significantly higher levels of serum myoglobin was noticed in chronic alcoholics as compared with those in normal subjects.