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IMMUNOLOGICAL CHARACTERISTICS OF CEA IN VARIOUS CANCEROUS STATES T.Miyazaki, Y.Kajita, T.Hachiya, M.Hamazu, Y.Ochi and S.Hosoda. Shiga Univ. of Medical Science, Kyoto prefectural Univ of Medicine.

Immunological characteristics of CEA extracted from cancerous patients was examined. When the serum and ascites having a high CEA level in cancer patients was fractionated on Sephadex G-200 column, the CEA value determined by CEA-RIA showed about Mr of 180,000. Purification of CEA was performed according to the following step, (1) PCA extraction, (2) gel-filtration, (3) anti-CEA chromatography. Then, the purified CEA was labeled with ^{125}I . All ^{125}I -CEA preparations reacted with not only anti-CEA but also anti-AG (Δ -acid glycoprotein). When the ^{125}I -CEA preparation was further purified by anti-AG chromatography, the purified preparation showed the high binding with anti-CEA (the monoclonal antibody and auto-antibody) and also anti-AG. However, there was no immunological reaction to AG with either these auto-antibodies or the monoclonal antibody. These results suggested that these two kinds of antibodies reacted with an antigenic determinant on the CEA molecule which also contained a immune determinant for AG.

Purified CEA could be determined by AG-RIA. These results meant that CEA originated from cancerous state had AG immune determinant.

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THE FOUNDAMENTAL AND CLINICAL STUDIES OF CEA RADIOIMMUNOASSAY KIT BY THE DOUBLE ANTIBODY METHOD. (Eiken Kit) M.Nobuhara, R.Kodera, T.Okamoto, T.Usui, M.Takeuti, H.Maeda, M.Sekimoto, H.Akagi. Osaka Medical College, Osaka,

The fundamental evaluation of CEA-Radioimmunoassay kit by the double antibody method proved to be reliable in its accuracy, reproducibility, dilution and recovery tests. The mean value \pm S.D. for 100 healthy adults subjects was 1.29 ± 0.50 ng/ml. High positive rate of CEA value was obtained in the patients with colonic cancer and cancer of pancreato-biliary system, especially high in the progressive cases and in the cases with hepatic metastasis, CEA level examined by the double antibody method compared with that of sandwich method showed good correlation.

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MEASUREMENT OF PLASMA ELASTASE 1 BY RIA - COMPARISON WITH TRYPSIN AND CEA -. K. Kozakai, N.Sue, Y.Maruyama, Y.Sasaki, R.Kaneko, H.Kurosawa, M.Noguchi, Y.Ohtsuka, D.Tsujino and R.Chida. Toho University School of Medicine. Tokyo and St. Marianna University School of Medicine. Kawasaki.

In order to assess the possible role as a tumor maker plasma concentrations of elastase 1 were measured using RIA kits (Dainabot Radioisotope Research Institute). Plasma samples were obtained from 267 subjects including 54 normal volunteers, 139 patients with various carcinoma and 74 patients with benign diseases. The results were compared with trypsin and CEA levels.

Plasma elastase 1 concentration in normal controls were 245.9 ± 76.6 ng/dl. Plasma elastase 1 level over 400 ng/dl was regarded as abnormally high. Esophageal, colorectal, carcinoma, primary hepatoma, pancreas carcinoma and bile tract carcinoma showed over 50% positive ratio. However, patients with benign diseases gave mean positive ratio of 37.8% with the highest ratio of 66.7 and 55.6% in chronic hepatitis and acute pancreatitis. When cut off level was set at 800 ng/dl relatively high positive ratio was seen in patients with hepatoma (37.5%) and pancreatic cancer (30.0%). Ten patients with chronic pancreatitis showed negative results.

Evaluation of elastase 1 in combination with CEA and trypsin may prove useful to differentiate pancreatic cancer from chronic pancreatitis.