

Evaluation of Radioimmunoassay Kit of CEA (Roche)

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We report the evaluation of CEA RIA kit (Roche Clinical Laboratories, Inc. U.S.A.). Excellent reproducibility was obtained. Mean C.V. was 3.8%. Recovery test showed low value (80%) at high concentration (16.0 ng/ml). Precision of control plasma ranged between 4.0 and 31%. The higher the concentration, the larger the C.V. This seems to be due to the pH of dialysis solution for depro-

teinization. A good correlation was observed between two labs. The correlation coefficient was 0.90. The regression line was $y=1.24x+0.66$. In normal subjects (male), assuming that the normal range is 0–2.5 ng/ml, 74.1% of non-smokers and 55% of smokers (20 cigarettes or more per day) were involved in this range. Also, there is no difference in the quantity of cigarettes.

Radioimmunoassay of Carcinoembryonic Antigen (CEA) by Double Antibody Technique

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Carcinoembryonic antigen (CEA) was purified from tissues of colonic adenocarcinoma by 0.6 M perchloric acid extraction, gel filtration on Sepharose 4B and Sephadex G-200, and preparative polyacrylamide gel electrophoresis. The preparation obtained was homogeneous on analytical disc electrophoresis. Monospecific antiserum to CEA was produced by immunization of rabbits with the perchloric acid extract, followed by absorption with normal sera and with saline extracts of normal colonic, pulmonary and hepatic tissues. The purified CEA was iodinated with ^{125}I by chloramine-T method. In preliminary experiments,

double antibody technique resulted in the most sensitive standard curve as compared to the ammonium sulfate precipitation and zirconyl phosphate gel methods. Further, the sensitivity of assay was increased by delayed addition of the labeled CEA. The method thus established was sensitive enough to measure 2 ng CEA/ml of serum using 0.1 ml of unextracted serum. The values (Y) obtained by the present method bore a linear relationship to those by the CEA-Roche kit (X), as expressed by a regression equation of $Y=0.99x+1.53$.