Fundamental Studies on the Usefulness of Human Gastrin Radioimmunoassay Kit from CEA-IRE-SORIN

N. Ishikawa, T. Imura, C. Sugimoto and K. Torizuka
Department of Radiology
T. Mori and S. Hamada
Central Clinical Radioisotope Division,
Kyoto University, School of Medicine, Kyoto

Recently provided radioimmunoassay kit for human gastrin (CIS) was evaluated. Sephadex G-50 gel filtration pattern revealed that most of radioactivity of ^{125}I-gastrin was eluted in a slow component, and almost all of them could be eluted in a fast component as bound after incubation with antiserum, and the amount of antiserum in the kit seemed sufficient. After incubation B and F was separated by addition of charcoal, and when antibody was absent 89 to 95% of free ^{125}I-gastrin could be precipitated with charcoal in the kit. In the system addition of animal serum before charcoal was required. Instead of animal serum, various amount of bovine serum albumin, rabbit serum and gastrin free human serum was used and non-specific absorption by charcoal was found sufficiently suppressed by other proteins also if more than 60% of protein concentration was achieved. As to temperature and duration of incubation, 72 hours seemed optimal at 4°C and shorter incubation resulted in reduced bound %, however, at room temperature 24 hour incubation showed almost equal binding as 72 hours at 4°C without any significant increase in incubation damage.

Standard curves were plotted almost linearly on logit-log paper and assay could detect 25 to 320 pg of gastrin. Coefficient of varience of standard curve were calculated as 4.6 to 6.0%. Reproducibility of the assay was 14.0 to 32.8% by 5 sera in four assays, and good recovery was obtained by additions of 50, 100, 200 and 400 pg/ml of standard gastrin to previously assayed human serum. (γ=0.97)

Specificity of the antiserum was studied against pentagastrin, AOC-tetragastrin and CCK-PZ and none of them was found to cross react significantly with the antiserum in their physiological concentrations.

From there observations CIS gastrin kit was considered satisfactory and useful for clinical applicatiion.

Presented by Medical*Online