the mean of $4.8 \pm 1.7$ (SE). The urinary excretion of cotinine in smokers increased after smoking 3 cigarettes for 30 min. Daily urinary excretions of cotinine reflected roughly the amounts of cigarettes smoked per day. These results indicate that the measurement of daily cotinine excretion by radioimmunoassay may be a good indicator of cigarettes consumption and is considered to be a useful tool for investigating the smoking effects in human.

Radioimmunoassay of Somatostatin and Its Clinical Application
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The establishment of radioimmunoassay for somatostatin is important for the assessment of its role in terms of humoral regulation. There are, however, several problems about the assay and extraction method. We developed a new assay system, and the assay procedure was already described elsewhere (Folia endocrinol. jap. 53: 1106, 1977). The concentrations of immunoreactive (IR-) somatostatin detected by this assay were 0.1-5 ng/ml. In this assay method, we examined the extraction method, and further investigated the clinical application.

IR-somatostatin in the tissue was extracted by aceton, methanol, ethanol, or a mixture of 2N acetic acid and methanol. The average recovery rate was approximately 65, 68, 75, more than 90% respectively. The dilution curve of IR-somatostatin extracted from each sections of the rat brain was paralleled to the standard curve gained by synthetic somatostatin. The extracts from the rat brain were identified by synthetic somatostatin on Sephadex G-25 column chromatography. We detected $31 \pm 2$ ng (M-SE) IR-somatostatin in rat hypothalamus and also other regions in a rat. Then we apply this method to the clinical use. The extracts from a human pancreatic tissue of insuloma were identified by it through the same chromatography. IR-somatostatin in C.S.F. was also detected by this assay. So this assay and extraction method would be able to use for the experimental and clinical application.

A Radioimmunoassay for Cholecystokinin-pancreozymin
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A sensitive and specific radioimmunoassay for cholecystokininpancreozymin (CCK-PZ) has been developed using rabbit antiserum to synthetic porcine (27-Tyr) CCK-PZ.

Preparation of antibody: The immunogen was conjugated with BSA. 0.7 mg of CCK-PZ was emulsified in 1 ml of Freund’s complete adjuvant, and injected subcutaneously into each rabbit at approximately 2-weeks intervals. About 100 days after the first immunization, serum from rabbit was collected.

Preparation of $^{125}$I-CCK-PZ: Using the chloramine T method of Greenwood and Hunter, iodination was performed with 3 mCi of Na$^{125}$I and 2 $\mu$g of the synthetic CCK-PZ. Specific activity was 200–300 $\mu$Ci/$\mu$g. $^{125}$I-CCK-PZ was separated from free iodine by gel filtration using Sephadex G-50 superfine.

The double antibody technic was used to examine the dilution-effect and specificity of the rabbit antiserum. Bo% showed 58%, so this result indicated that the rabbit antiserum had a high titre enough to be used at the dilution of antiserum of 1:10000.

In this studies Gastrin, Secretin, Glucagon and Enteroglucagon showed no significant cross reaction at each concentration of 10 pg/ml-100 $\mu$g/ml.