

## A New Pancreas Scanning Agent

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Radioiodinated phenylalanine with specific activity of about 1 mCi/mg was synthesized with isotopic exchange reaction in acidic solution. The radiochemical purity of the substance was examined with ascending paper chromatogram using n-butanol saturated with 1N acetic acid as a developer. The radioactivity of radioiodinated phenylalanine was on the colored spot developed with ninhydrin reaction. Rf values of the substance and free iodide in this paper chromatographic system were 0.6 and 0.3 respectively.

The radioiodinated phenylalanine solution liberated about 13% of free iodine after 16 days storage in refrigerator. However, the degree of the liberation was very much decreased with the addition of stabilizer in the solution.

Mice were given radioiodinated phenylalanine intravenously and sacrificed at 2, 5, 10, 15, 30 and 60 min after injection and organs were routinely taken for radioactivity assay. The radioactivity was found in the highest concentration in the pancreas before 10 min after i.v. injection into mice. The maximum uptake of the injected activity into total pancreas was about 4% of the total dose, regardless of the total administration dose of 60  $\mu$ g

or 3  $\mu$ g per mouse. This substance was demonstrated to concentrate in pancreas 30 min after i.v. administration with a pancreas: liver concentration ratio of about 5:1 and pancreas: blood concentration ratio of about 4:1. Kidney was only other organ than pancreas which showed more concentration than blood.

By the paper chromatographic examination of excreted urine from the injected mice, a peak having Rf value of 0.9 was found besides iodinated phenylalanine and iodide, and its relative ratio of radioactivity to other peaks was increased with time. This may be assumed as a metabolite of radioiodinated phenylalanine.

Radioiodinated phenylalanine ( $^{131}\text{I}$ ) and selenomethionine ( $^{75}\text{Se}$ ) were injected simultaneously into mice and organ uptakes of  $^{131}\text{I}$  and  $^{75}\text{Se}$  were measured and compared. The mean concentration of  $^{131}\text{I}$  was more than 4 times that in liver during 30 min to 2 hours after the administration, and the mean concentration of  $^{75}\text{Se}$  in pancreas of the same mice group was about 2 times that in the liver during the same period of time. It was, therefore, demonstrated that radioiodinated phenylalanine had more selective affinity to mice pancreas than selenomethionine.

## An Autoradiographic Study on the Cell Differentiation of the Gastric Epithelium of the Mouse

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Cell proliferation and migration in the gastric epithelium of the mouse were studied with autoradiography after pulse labeling or cumulative labeling with  $^3\text{H}$ -thymidine.

After embedding in paraffin, partly in epon, and sectioning in longitudinal plane, auto-

radiographs were stained with H-E or PAS. First series: Mice were injected with  $^3\text{H}$ -Thymidine 1  $\mu\text{C/g}$  intraperitoneally four times at intervals of six hours and animals were sacrificed at 20, 48, 72 hours, 6, 7, 10, 17 and 38 days. Second series: For cumulative labeling