pH of the solution is adjusted to 2.5-3.0 by 1N HCl. Following continous mixing for 10 min, the reaction is terminated by addition of 1 drop of ascorbic acid (500 mg/ml) and subsequent adjustment of pH to neutral by 7% $NaHCO_3$. After fractionation by passing through properly prepared Sephadex column, the initial peak of radioactivities are pooled and further filtered through 0.22 μ of Millipore filter. Whole these procedures can be completed within 1 hour. The labeled compound is found to be sterile, pyrogenfree and nontoxic to animals and human subjects.

When albumin is labeled by this method, ^{99m}Tc activity is associated with several components, as a chelate, as unreacted pertechnetate, and as hydrolyzed forms as well as that which is bound to albumin.

Conventional analytical techniques—TCA precipitation, paperchromatography and anion exchange chromatography—all failed to separate labeled compounds from chelated material. Sephadex gel filtration was found to be a single analytical method of choice.

Reduction of the amount of $SnCl_2$ resulted in the decrease of labeling efficiency, and 5-10 μg of $SnCl_2.2H_2O$ were shown effective enough to reduce 20 mCi of $^{99m}TcO_4$ and to label 1 mg of Albumin with efficiency of more than 60%.

Mouse distribution study of ^{99m}Tc-Albumin did not differ significantly from that of ^{131}I-Albumin.

Sodium paraamino hippuric acid and inulin were also labeled, but less effectively. (30-50% efficiency).

After intravenous injection of these compounds into rat, movement of radioactivities from cardiac pool to both kidneys and then to the bladder was clearly observed by scintillation camera.

This method is very effective and rather simple, and is also considered to have promissing future for wide clinical applications.

The Use of ^{68}Ge-^{68}Ga Generator

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^{68}Ga has a half life of 68 minutes and decays by positron emission. It has the following advantages: (1) Its short half-life decreases the radiation dose to the organ. (2) It is available from a long half-lived ^{68}Ge generator (about 280 days). (3) It can be used with coincidence detection systems.

^{68}Ga is eluted using a 0.005M solution of EDTA. We have perfomed brain and kidney scintigraphies with ^{68}Ga EDTA. For the preparation of labeled compound, it is necessary to free ^{68}Ga from the EDTA chelating agent. ^{68}Ga-citrate may accumulate in malignant tissue. ^{68}Ga-citrate scan on patient with malignant lymphoma shows increased activity at the supraclavicular region. To compare the positron scan with conventional scan, the line source response is recorded in each method. The relative peak value is highest in positron scan and the FWHM of positron scan is superior to the dual detector system.

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