

electrodes showed a labeling efficiency of about 70% right after electrolysis, and by standing the electrolyte for about 10 min, more than 95% of ^{99m}Tc was tagged to albumin.

No differences in blood clearance rates in a rabbit could be observed between ^{99m}Tc -albumin and ^{131}I -HSA at least for three hours after simultaneous administration.

Pt-Sn electrodes gave good labeling efficiency for preparation of ^{99m}Tc -millimicrosphere. When

this labeled compound was injected into mice, more than 90% of the activity was detected in liver 5 min after administration.

As the results of these investigations, we concluded that electrolysis method for preparation of various ^{99m}Tc -compounds is one of the most useful methods, and the preparation by the apparatus which we developed has many advantages such as simplicity, rapidity and reproducibility.

A simple, rapid and efficient preparation of ^{99m}Tc -compounds by electrolysis (II)

^{99m}Tc -stannous hydroxide, ^{99m}Tc -EDTA

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As previously reported, the electrolysis method is more simple and convenient for labeling of ^{99m}Tc than the other conventional methods. We further expanded the application of this method to the other compounds and confirmed that this method can be applied for labeling of stannous hydroxide and EDTA with ^{99m}Tc . We have experimentally determined ^{99m}Tc -EDTA can be used for the measurement of GFR and ^{99m}Tc -stannous hydroxide for the liver scanning.

By using Pt-Sn electrodes, better result was obtained in labeling efficiency of both ^{99m}Tc -EDTA and ^{99m}Tc -stannous hydroxide than by Pt-Zr electrodes.

^{99m}Tc -EDTA was prepared by adding $^{99m}\text{TcO}_4^-$ soln. to Sn-EDTA soln. which was previously produced by electrolysis. The efficiency of chelation averaged more than 94% by allowing this mix-

ture for about 15 minutes. ^{99m}Tc -EDTA and ^{169}Yb -DTPA were simultaneously injected in an adult rabbit, and almost the same GFR values were obtained as 15.6 ml/min and 16.0 ml/min respectively.

As for ^{99m}Tc -stannous hydroxide, chromatography studies have shown that electrolysis with 0.1–0.3 coulomb gives a labeling efficiency of more than 98%. When injected into mice, more than 90% of this compound was taken up by liver.

As the results of further investigations, we found this electrolysis method can be applied for labeling of several other compounds such as polyphosphate and bleomycin. When this reaction is aseptically performed in sterile 0.9% NaCl soln., the resulting solution is ready for injection; this is considered to be an advantage for the medical use.