

slice, the following results were obtained. Distributions of ^{203}Hg -chlormerodrin and ^{203}Hg -acetate in the kidneys were very similar and these agents

were localized on renal cortex, especially on medullary rays. But the deposition of $^{99\text{m}}\text{Tc}$ -DMSA was restricted within renal cortex except medullary rays.

Chemical and Biological Studies on $^{99\text{m}}\text{Tc}$ -DMS Complex

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$^{99\text{m}}\text{Tc}$ -dimercaptosuccinate ($^{99\text{m}}\text{Tc}$ -CMS) complex was prepared by electrochemical, electrolysis, SnCl_2 and $\text{NaBH}_4\text{-HCl}$ methods. In all methods, less than 0.1 % of free $^{99\text{m}}\text{TcO}_4$ was detected in the original preparation. The electrophoretic and paperchromatographic patterns of $^{99\text{m}}\text{Tc}$ -DMS was separated into two peaks. One peak was detected at nearly same spot as free DMS while the other peak remained at the origin. Kidney uptake was due principally to the $^{99\text{m}}\text{Tc}$ -DMS complex which remained at the origin during the separation procedure. There were significant differences in

organ distributions depending upon the methods and conditions of preparation. The highest renal concentration was achieved with SnCl_2 method at $\text{pH}=2$ (60% dose/g-organ), whereas, the lowest was with electrochemical method at $\text{pH}=10$ (1.9% dose/g-organ), at 3 hr. after injection into mice.

The $^{99\text{m}}\text{Tc}$ -DMS complex prepared by the electrochemical method at $\text{pH}=10$ was accumulated significantly by bone, which might be useful for bone scanning.

Clinical Evaluation of Renal Imaging by $^{99\text{m}}\text{Tc}$ -DMSA

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^{203}Hg -Neohydrin was commonly in use as renal imaging agent. However, ^{203}Hg -Neohydrin has drawbacks such as high exposure dose to the patient.

$^{99\text{m}}\text{Tc}$ -DMSA study on clinical renal imaging

was performed. Sixty three cases consisted of 33 males and 30 females from 12 to 89 years old (mean 57.9 y. o. were evaluated by this new radiopharmaceutical.

Pho/Gamma HP with parallel high resolution