

300–500 μCi of $\text{Na}_2^{51}\text{CrO}_4$ and incubate for 15 min at room temperature.

4. Add 10 μg of $\text{SnCl}_2 \cdot 2\text{H}_2\text{O}$ and 50 mg of ascorbic acid as reducing agents and mix gently for 5 min.
5. After washing with 20 ml of saline, resuspend the platelets in 20 ml of patient's plasma and transfuse to the subjects.

Organ distribution of $^{99\text{m}}\text{Tc}$ -labeled platelets was observed by means of scintillation camera. Platelet survival and body surface counting were done in the usual way.

Results: Labeling percent of platelets by $^{99\text{m}}\text{Tc}$ was 50–60%. No evidence of cell damage or re-utilization of $^{99\text{m}}\text{Tc}$ was obtained. No significant

elution of the label was recognized by repeated washes of labeled platelets.

In normal subjects, platelets were accumulated in spleen and liver. Platelet survival was 8–10 days. Organ distribution of $^{99\text{m}}\text{Tc}$ -labeled platelets was coincident with the results of body surface counting by ^{51}Cr . In one group of patients with idiopathic thrombocytopenic purpura, platelets were destructed in the spleen and in the other group, spleen and liver were the sites of cell destruction. Platelet survival shortened characteristically. In patients with congestive splenomegaly, polycythemia vera and primary thrombocythemia, platelets were sequestered into the spleen but lifespan was normal.

Study on Aging and Reticuloendothelial System's Function Due to the Intravenous Injection-method of Radioactive Fe^{59} Chondroitin Sulfate Colloid

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The authors have previously reported at the First Nuclear Medical Society's Local Meeting of Kanto District, that the intravenous administration of Fe^{59} chondroitin iron sulfate resulted in a little lower or normal uptake-function of colloid-iron in the aged persons or those having severe arteriosclerosis as compared with normal subjects (persons), while the disposing function was lowered about 2.1 times as compared with the normal group.

In the present study, quantitative determination was performed on radioactive Fe^{59} taken up into the reticuloendothelial system's organs after

intravenous injection of chondroitin iron sulfate, at the same time, quantitative determination was made with systemic Autoradiograms, and also, experiment was performed for the estimation of the function of the reticuloendothelial system's organs with aging.

As the method of experiment, the experimental animals (young and old mice fed with lanolin) were intravenously injected with chondroitin iron sulfate 0.5mg, 1 μCi per 20g body weight of mouse at the tail, and were left to the boldd-letting death in the progress of time, then by employing the method of Copp et al, the sub-

jected organs such as the liver, spleen, kidney, bone marrow and blood were taken out, and the radioactive activation was measured on those organs by means of Well Type Scintillation Counter, while Absorption Ratio (AR) and Differential Absorption Ratio (DAR) were obtained by the method of T. Fields et al. The systemic Autoradiograms was made by causing the freezing death in time-course after intravenous injection of chondroitin iron sulfate, and by preparing the freezing systemic slice with its thickness of 50 μ , which was dried, and then, non-screen type-x-ray film was exposed for 6 days with Contact Method.

Results: AR of the reticuloendothelial system of Liver showed the lowest on lanolin-fed mice at 5 minutes after i.v. injection of chondroitin iron sulfate.

Namely, the rate was 20%, on the other hand, the rate was 68% in young mice, 60% in adult mice and 56% in senile mice.

Moreover, AR measured in time-course after 6 hours was similarly low on senile mice and lanolin-fed mice as with the rate after 5 minutes,

and that the decreasing rate was slow.

AR of blood was highest in lanolin-fed mice after 5 minutes, namely 70%, and it was 42% even after 10 minutes, suggesting the high remaining amount of chondroitin iron sulfate in blood.

On the other hand, AR of the spleen was the highest namely 10.3% at 30 minutes after intravenous administration in lanolin-fed group, the rate was twice that of young and senile mice.

AR of the bone marrow was high in young mice and low in lanolin-fed mice and senile mice, also the peak was delayed, and AR was lowered.

The systemic Autoradiograms showed the disappearance of the radioactive activation from blood at 5 minutes after intravenous injection in young mice, and the similar disappearance was observed on adult mice after 10 minutes, while the activation remained at the heart and the inferior vena cava even after 10 minutes in senile and lanolin-fed mice.

From the above results, reticuloendothelial functions is degraded with aging.

Quantitative Assessment of Active Marrow Distribution by Scintigraphy

—Comparative studies using I-131 U.d.R. for the hematopoietic marrow and Tc-99m S colloids for the reticuloendothelial marrow labeling—

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I-131 iododeoxyuridine, IUDR, an DNA precursor, was applied to label the cell-dividing i.e., hematopoietic marrow and Tc-99m sulfur

colloids was used to label the reticuloendothelial one and distribution pattern of both marrow elements was compared by scintiphotographic