

incubated in 3.0 cc of phosphate buffer. After incubation the radioactivity in the bag and dialysate were counted.

And then the blood plasma in dialysis bag was analysed by Sephadex G-25 filtration.

As in vitro experiment for analysis of blood plasma, 3.0 cc of normal blood plasma was incubated with 0.1 μ Ci of ^{131}I in 3.0 cc of phosphate buffer. After incubation, the radioactivity in blood plasma was analysed by the above mentioned method.

Sephadex G-25 filtration

After incubation, ^{131}I labeled compounds in the blood plasma in dialysis bag were analysed

by Sephadex G-25 column (length 8 cm, diameter 0.6 cm).

Result:

As compared with in vitro experiment used ^{131}I only, it was found that ^{131}I labeled compounds in red blood cell after ^{131}I administration were only ^{131}I , on the other hand, ^{131}I labeled compounds in blood plasma were ^{131}I and hormonal ^{131}I .

It was proved that the proportion of ^{131}I in red blood cell and blood plasma is constant irrespective of the thyroid state and ^{131}I red cell-plasma ratio is dominated by the radioactivity of hormonal ^{131}I in blood plasma.

Studies on Bone Marrow Nucleated Cells in Various Blood Diseases

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We have studied on the metabolism of DNA and proliferation activities of bone marrow cells in various blood diseases (AML 5, Megaloblastic anemia 2, Iron deficiency anemia 5, Polycythemia vera 2, ITP1) by means of the microautoradiographic technique with ^3H -thymidine.

The results were summarized as follows:

1) Remarkably lower labeled % of ^3H -thymidine was observed in the acute myeloblastic leukemia in both myeloid and erythroid series. It was indicated that the proliferative activities of the acute leukemic cells were very weak, and it was suspected that the DNA synthetic time of these cells was more prolonged than the normal.

2) In the megaloblastic anemia labeled %

of myeloid cells was similar to normal, but incorporation into metamyelocytes was moderately elevated. Remarkably higher labeled % was observed in basophilic erythroblasts, but it was low in polychromatic erythroblasts.

3) Remarkably higher labeled % of ^3H -thymidine was observed in the iron deficiency anemia both in myeloid and erythroid series, especially in the erythroblasts.

4) In the polycythemia vera incorporation into myeloid series was depressed slightly, but in the erythroid series the incorporation was more than normals.

5) In the ITP labeled % of ^3H -thymidine was similar to normal in both myeloid and erythroid series.

Inhibition of DNA Biosynthesis in Human Leukemic Leukocytes by Cytosine Arabinoside and Clinical Effects of the Agent

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Effects of cytosine arabinoside (CA) on nucleic acid metabolism of human leukemia leukocytes were investigated with ^{14}C -labeled

precursors of nucleic acid in leukocyte suspension prepared from peripheral blood of leukemia patients. Rate of inhibition of DNA-