

hours, but in the promyelocytes, it once increased and decreased soon thereafter.

These phenomena are accounted for with

difficulty, but may possibly be related to the characteristics of proliferation and differentiation of the cells of CML.

RNA Metabolism of Human Leukemic Leukocytes

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In the study presented here, we demonstrate that, when human acute leukemic leukocytes were incubated by shaking at 37°C for a short time with ^{32}P orthophosphate and 0.2 mM each of four common nucleosides and subsequently were treated with water-saturated phenol at cold, rapidly labeled RNA fraction could be separated on the methylated albumin column.

The extraction medium consists of 0.14M NaCl 0.02M tris-buffer PH 7.8 0.5 mM EDTA with 0.5% SDS. The total nucleic acids resolved by the column into 4 components: acid soluble fraction, s-RNA, DNA, and r-RNA.

A chromatogram of the 60 min. labeled material obtained from a ALL patient show-

ed incorporation of ^{32}P into P_1 and P_2 . P_1 was a relatively small peak between DNA and r-RNA. P_2 was a high peak which was eluted later than r-RNA.

In a chromatogram of the 120 min. labeled material obtained from the same patient, both P_1 and P_2 peaks were still seen, but P_2 shifted toward the peak of r-RNA. The similar results were obtained in the patients with AML and monocytic leukemia.

These findings indicate that RNAs most actively synthesized in acute leukemic cells are high molecular weight RNAs distinct from s-RNA and r-RNA (P_2 and probably P_1). These RNAs are so called rapidly labeled RNAs and belong to nuclear RNAs.

Life Span of the Leukocytes Labelled with Diisopropylfluorophosphate (DF^{32}P)

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The life span of the leukocytes was measured by a method which leukocytes were labeled with radioactive diisopropylfluorophosphate (DF^{32}P) or radioactive chromium ($\text{Na}_2^{51}\text{CrO}_4$) in vivo or in vitro.

In vivo labelling method; DF^{32}P (100-200 μCi , 0.5-1.0 mg, and 20 ml of saline were injected intravenously for this study.

In vitro labelling method; 100-200 ml of blood was withdrawn from the subject. DF^{32}P of the same doses or $\text{Na}_2^{51}\text{CrO}_4$ (300-400 μCi) was added and the blood was remained at room temperature for one hour. Ten ml of the blood was obtained for a measure-

ment of blood volume, white blood cell count, its differential count and specific activity of the leukocytes in syringe. The remainder of the blood was injected intravenously, after adding 100 mg of ascorbic acid. Samples of the venous blood were withdrawn in determined interval. Leukocytes of each sample were separated by dextran sedimentation techniques, followed by 0.83 per cent NH_4Cl hemolysis or hypotonic lysis.

In DF^{32}P labelling method, the radioactivity was measured with gas-flow counter and in ^{51}Cr labelling method, it was measured with well-type scintillation counter. After count-