

blood

1962 19: 527-

CORRESPONDENCE

Information about reproducing this article in parts or in its entirety may be found online at:
http://bloodjournal.hematologylibrary.org/misc/rights.dtl#repub_requests

Information about ordering reprints may be found online at:
<http://bloodjournal.hematologylibrary.org/misc/rights.dtl#reprints>

Information about subscriptions and ASH membership may be found online at:
<http://bloodjournal.hematologylibrary.org/subscriptions/index.dtl>



CORRESPONDENCE

DIGESTION OF CELL NUCLEI BY ENZYMES

Sir:

In connection with a brief note by E. Gardner, Jr., Claude-Starr Wright, and Bettie Z. Williams,¹² we would like to inform you that the studies on the digestion by the Dna ase and RNA ase of the blood and bone marrow cells were performed by Prof. J. Aleksandrowicz et al. (Blicharski, Perkowska, Spierer) in the IIIrd Internal Diseases Clinic A.M. in Cracow, Poland. The results were published in 1954.^{2-4,7}

In 1957, we published the results of study of digestion of blood and bone marrow smears by urine of normal people and of patients with chronic granulocytic leukemia.^{1,8} Later it was shown that some other substances such as ACTH,⁵ cortisone,⁶ and also substances of vegetable origin (*inonotus obliquus*) pass specific digestive properties for some cell nuclei. Recently we isolated a substance from fungus *inonotus obliquus* which selectively digests the nuclei of cells of chronic granulocytic leukemia, but does not change normal cells. The difference can also be observed on some blood and bone marrow smear slides. The mechanism of this is not known. It seems that chemical changes caused by DNA ase are related to the presence of leukemic isomer of desoxyribonucleic acid.

We observed that the blood and bone marrow smears of patients suffering from chronic granulocytic leukemia show beginning of the digestive process in younger parts of the nuclei of some myelocytes. Other myelocytes and mature leukocytes are not digested. One can presume that the latter cells are non-leukemic and simply pushed from the marrow by the expanding leukemic cell population.

Dr. Janina Krauss-Zaki

IIIrd CLINIC OF INTERNAL DISEASES
CRACOW, POLAND

REFERENCES

1. Aleksandrowicz, J.: Choroby krwi i narządów krwiotwórczych. Warszawa, 1960.
2. —: Hematologia kliniczna, Warszawa, 1955.
3. —, and Spierer, L.: Wahania poziomu rybonukleazy w krwi i moczu chorych na różne postacie białaczek. Posiedz. Hematol. w Krakowie XII., 1953, Arch. Immun. 1955.
4. Blicharski, J.: Próby zastosowania proteolitycznych właściwości surowicy krwi i dializatu moczu w cytodiagnostyce hematologicznej. Polski tygodnik lek. 8: (4) 143, 1954.
5. Krauss-Zaki, J.: ACTH jako czynnik hydrolizujący kwasy dezoksyrybonukleinowe w zastosowaniu do badań cytoenzymatycznych. Haematologica 1:48-50, 1957.
6. —: The cytoenzymatic action of ACTH, Cortisone-hormone and extract *Poria obliqua*. In print.
7. Perkowska, E.: Badania nad wpływem nukleaz na hydrolizę jader neutrocytów u kregowców. Folia morfologica 3:217-223, 1956.
8. —: Relationship between the age of the neutrophil and the susceptibility of its nucleus to hydrolysis with urine dialysate. Acta haemat. 17:247-249, 1957.
9. Shugar, D.: Enzymy działające na kwasy nukleinowe. Postepy Biochem. 1: no. 3-4, 1955.
10. Tobiasz, V.: Über den differenzialdiagnostischen Wert den Anwendung von Enzymen in der Haematologie. Acta haemat. 14:153, 1955.
11. Urański, I.: Zastosowanie plynów przesiękowych do badań cytoenzymatycznych. Pol. Arch. Med. Wewnet. 1:43-49, 1959.
12. Gardner, E. Jr., Wright, Claude-Starr, and Williams, B. Z.: The use of desoxyribonuclease as an aid to the identification of primitive white blood cells. Blood 19:102, 1961.