

Hematology

[Science](#), [Biology](#)



Hematology A Granulocytes (Neutrophil, Basophil, and Eosinophil) Monocytes

Lymphocytes Cell size Eosinophil and Neutrophil are about 10-16 μm while Basophil is 10-14 μm .

12-20 μm .

8-15 μm including small, intermediate and large lymphocyte.

N: C ratio

30 % for Eosinophil and Basophil, while Neutrophil is about 30- 40 %.

50 %.

80 % for small and 50 % for large.

Nuclear position

Central.

Peripheral.

Peripheral.

Nuclear color/chromatin pattern

Coarse chromatin.

Fine chromatin.

Dense chromatin.

Nucleus

Segmented and lobed in Eosinophil and Neutrophil but non-segmented in Basophil.

Kidney-shaped.

Round

Cytoplasm color and quantity

Cytoplasm is large, irregular and dark in Basophil. Pink-tan cytoplasm in Neutrophil and blue in Eosinophil.

Cytoplasm is blue-grey.

Blue cytoplasm in small and medium but paler in larger lymphocytes.

Cytoplasmic granules

Basophils have purple-black granules. Orange-brown granules in Eosinophil and blue in neutrophil.

Fine red-purple granules.

Azurophilic granules.

B

A defect in LYST gene causes Chediak-Higashi syndrome (CHS). LYST instructs the body to make the protein necessary for the transportation of materials to the lysosomes (Hoffman 78). CHS is inheritable, and its clinical features include light colored eyes and hair, grayish or white skin tone, nystagmus and frequent infections in the skin, lungs and mucous membrane. Alder-Reilly anomaly is as a result of a defect involving complexes of protein-carbohydrate, which is termed as mucopolysaccharides (Hudnall 102). It is a rare disorder and autosomal recessive. Clinical characteristics include granules that resemble toxic granulation, presence of mucopolysaccharides deposits in cytoplasmic granules (Wintrobe, Maxwell & John 9).. Alteration of the Lamin B receptor gene changes chromatin distribution, shape of the cell nucleus, protein packaging, and DNA thereby causing Pelger-Huet anomaly. Abnormal neutrophil is a clinical feature of Pelger-Huet anomaly.

Works Cited

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