

A peripheral blood mononuclear cell (PBMC) is any peripheral blood cell having a round nucleus.

These cells consist of lymphocytes (T cells, B cells, NK cells) and monocytes, whereas erythrocytes and platelets have no nuclei, and granulocytes (neutrophils, basophils, and eosinophils) have multi-lobed nuclei. In humans, lymphocytes make up the majority of the PBMC population, followed by monocytes, and only a small percentage of dendritic cells.

These cells can be extracted from whole blood using ficoll, a hydrophilic polysaccharide that separates layers of blood, and gradient centrifugation, which will separate the blood into a top layer of plasma, followed by a layer of PBMCs and a bottom fraction of polymorphonuclear cells (such as neutrophils and eosinophils) and erythrocytes. The polymorphonuclear cells can be further isolated by lysing the red blood cells. Basophils are sometimes found in both the denser and the PBMC fractions.

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Last update: **2024/06/07 02:55**

