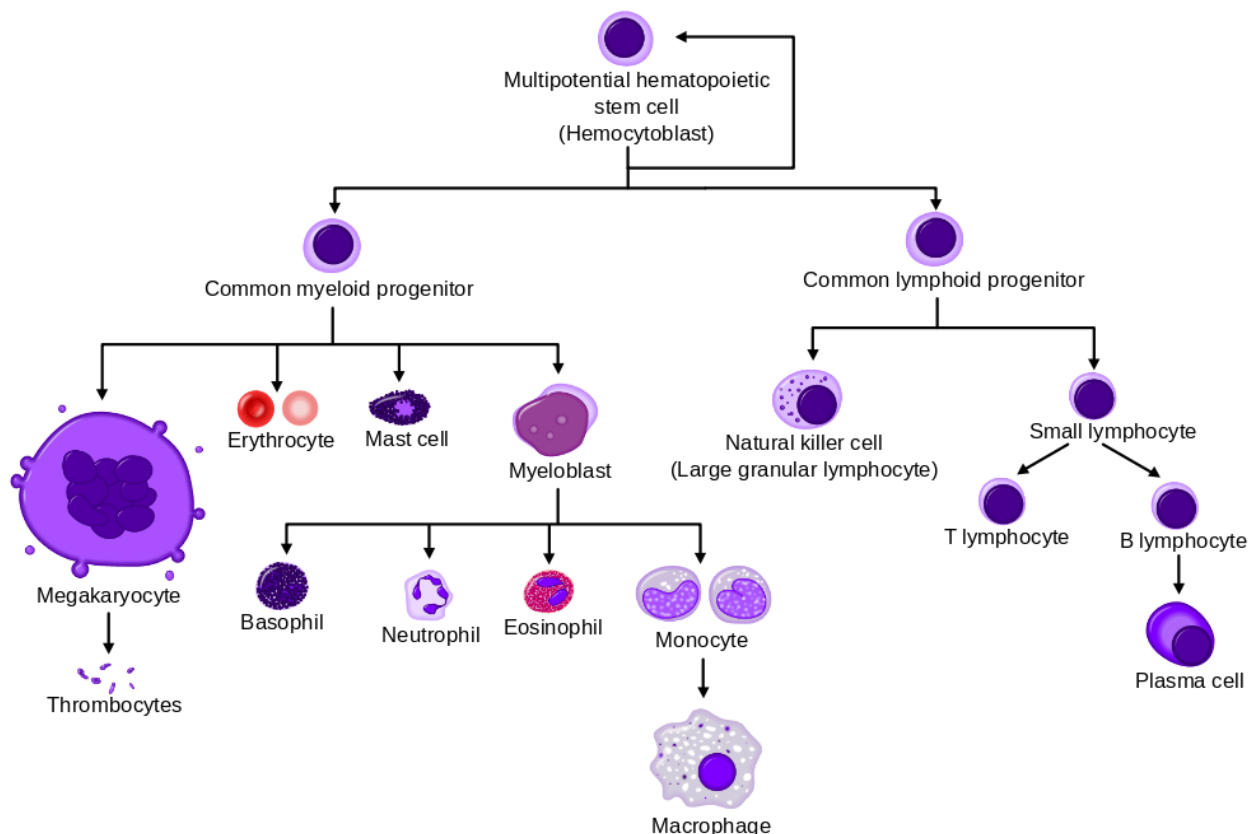


## 2.1.3

# Hematopoiesis



The figure above shows hematopoiesis or the formation of blood cells. The various types of cellular components of blood are each created from a single stem cell called a hemocytoblast. Note that megakaryocytes produce thrombocytes (or platelets), erythrocytes make up the red blood cells and everything else is one of the types of “white blood cells” (also called leukocytes).

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Each of the cells and platelets found in the blood arise through a process called **hematopoiesis**. Hematopoiesis begins with a single type of stem cell. These stem cells, known as **hemocytoblasts** and are located in red bone marrow in children and adults. In a developing fetus, hemocytoblasts are also found in the liver, spleen and lymph nodes as well as bone marrow. Ultimately, through the process of hematopoiesis, hemocytoblasts will differentiate into red blood cells, white blood cells, and cell fragments known as platelets. As we will learn later, platelets are important in blood clotting processes. White blood cells are discussed later in module 3 as well as in the lab portion of this course, but it would be good to remember that macrophages are large phagocytic cells that gobble up foreign material and damaged cell parts.

Macrophages perform an important step in the breakdown of red blood cells. Neutrophils are very common with infections and Lymphocytes are an important part of our immune system and are the source of antibodies which you have probably heard about. We will talk about lymphocytes later.



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