

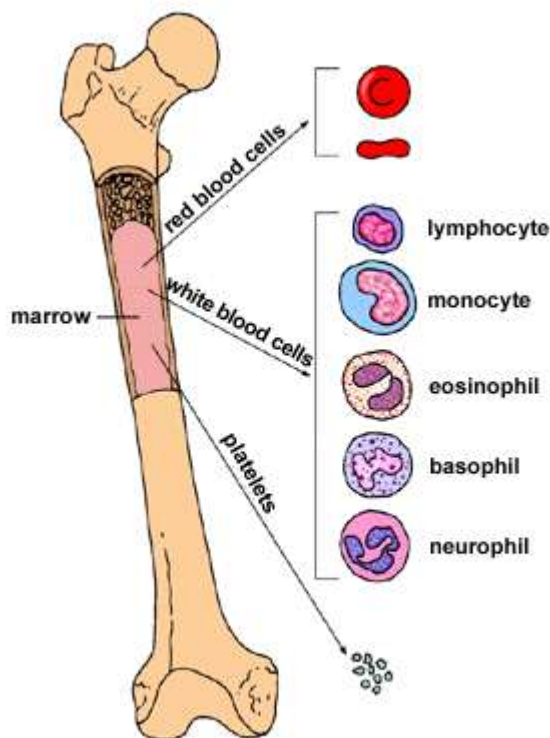
## Lab 6 : Blood

Figure 1: The composition of mammalian blood

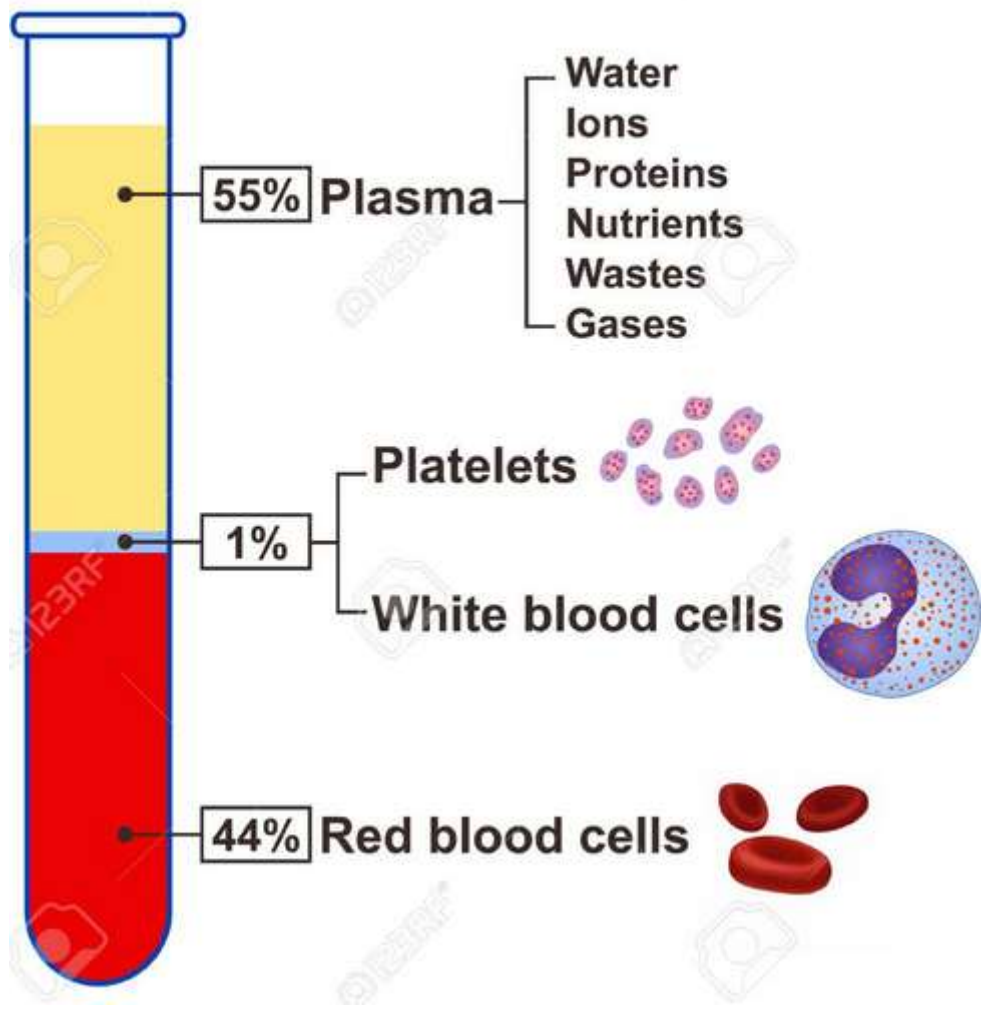
Plasma 55%	
Constituent	Major function
1- Water	Solvent for carrying other substances
2- ions (blood electrolytes )	
Sodium Potassium Calcium Magnesium Chloride Bicarbonate	osmotic balance , PH buffering and regulation of membrane permeability
3- Plasma Proteins	
Albumin Fibrinogen Immunoglobulin (antibodies )	osmotic balance , PH, buffering clotting
4-Substances transported by blood	
Nutrients Waste products of metabolism Respiratory gases Hormones	such as glucose , fatty acids , vitamins  O <sub>2</sub> and CO <sub>2</sub>

**Figure 2: The composition of mammalian blood:**

Cellular elements 45%		
Cell type	Number (per ml-(mm <sup>3</sup> )of blood	Functions
1- Erythrocytes (Red blood cells )	5-6million	Transport oxygen & help transport co2
2- Leukocytes& immunity (White blood cells)	5,000-10,000	Defense
3- Platelets	250,000-400,000	Blood clotting



# Components of Blood

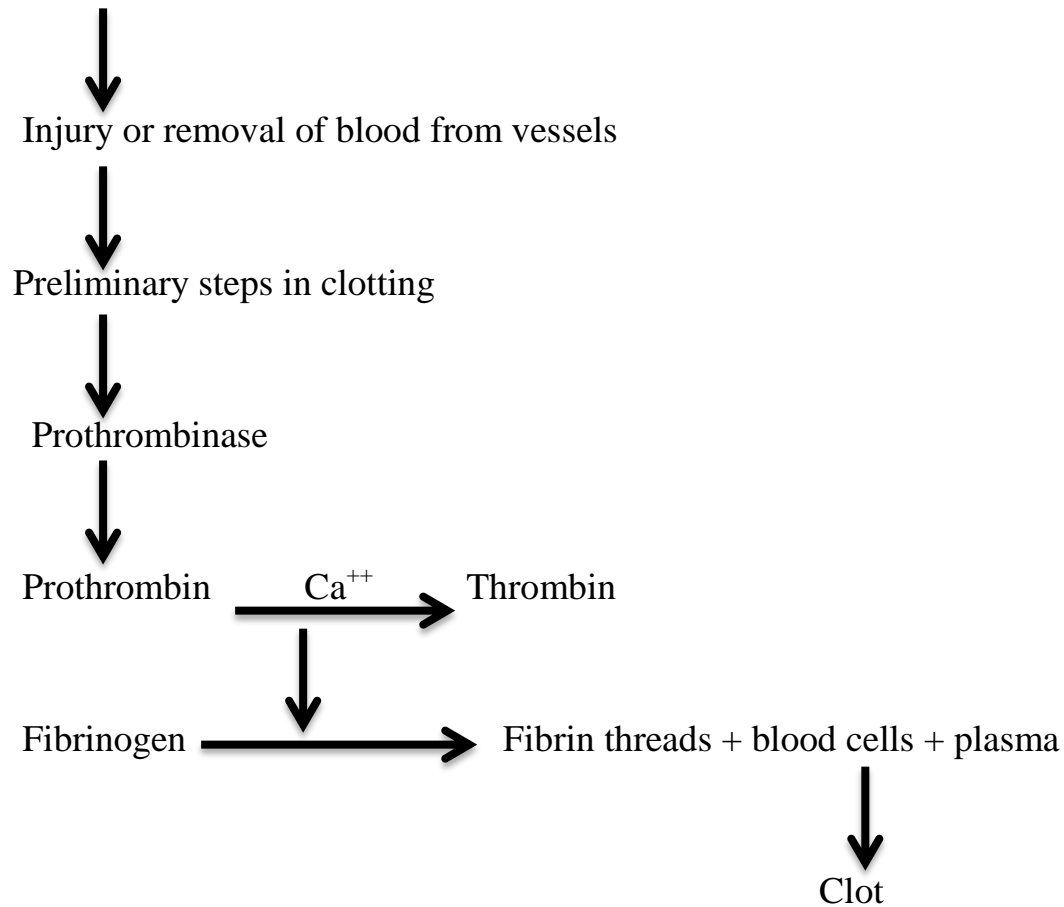


**Table 1: Blood components**

Components	Characteristics
Red blood cells	<ul style="list-style-type: none"><li>-Transport oxygen and some co2</li><li>-Lack a nucleus</li><li>-Hemoglobin</li></ul>
White blood cells	<ul style="list-style-type: none"><li>- Large</li><li>-Several different types</li><li>-All contain nuclei</li><li>-Defend the body against disease</li></ul>
Platelets	Cell fragments needed for blood clotting
Plasma	<ul style="list-style-type: none"><li>-Liquid</li><li>-Contains proteins</li><li>-Transports red and White blood cells</li><li>-Platelets</li><li>-Nutrients enzymes</li><li>-Hormones</li><li>-Gases</li><li>-Inorganic salts</li></ul>

## Blood Clotting

The steps in blood clot formation



Serum (sera = plural): The fluid that remains after clotting has occurred is called serum. Serum contains all the components of blood plasma except the clotting factors, as expressed in the formula :

Plasma = serum + Clotting factors