

Introduction in Immunology

Definition of Immunity:

the body's response for each foreign substances (antigens) and sometimes some components of the same body, and get rid of antigens and the removal its effects on the body.

Immunity divided mainly into two main types:

First, Non Specific Immunity (Innate):

Called Natural Immunity which is present in human since birth and is not specialized and quality against a foreign substances, such as attack the white blood cells a foreign substances, and kill microbes by some secretions such as stomach secretions, as well as the human skin, which is the first point of defense.

Secondly, Specific Immunity:

Called Acquired Immunity which arise as a result of the body exposure to antigens or microbe and thus consist a specific immune response against antigens that does not exist since the birth, but while gaining life.

Specific Immunity (Acquired) divided into two types:

1. Humoral Immunity:

An immune specific B cells, (B Cells Immunity), which is active formation of antibodies that are associated with antigens and kill it.

2. Cellular immunity (Cell Mediated Immunity):

An immune specific T cell (T Cells Immunity), who works on the formation of lymphocytes, which attack any foreign substance in the body.

- **Antigens:** foreign materials that enter the body and recognized and resisted by the body’s immune system.

- **Antibodies:** are protein molecules formed by the body as a result of exposure to antigens also called Immunoglobulins, figure (1).

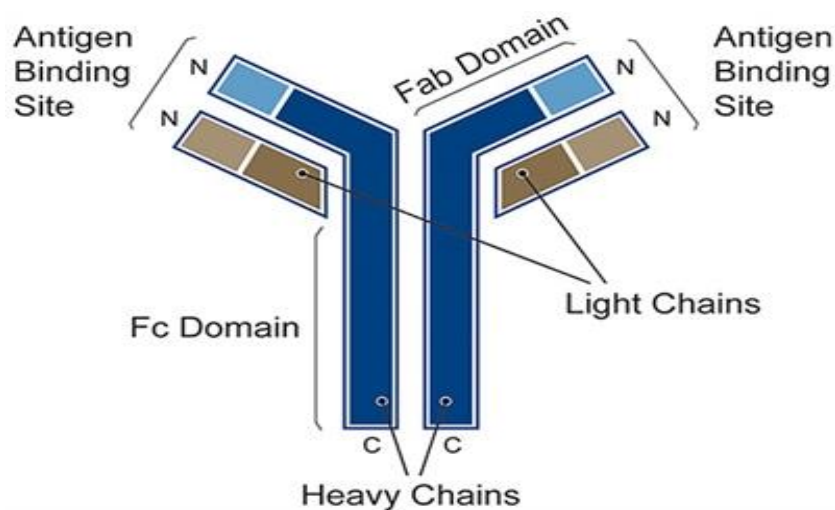


figure (1):Immunoglobuline

Immunoglobulins are divided into five types which are:

A - IgG:

Forms 80% of the body's Immunoglobulins, it is the only globulin which crosses the placenta from mother to fetus is important in the fight against bacterial and viral infections.

B - IgM:

Is the largest Immunoglobuline where consists of five modules, appear first Ab when exposed to any antigen , They are found in the blood and lymph fluid.

C - IgA:

Forms 10-15% of the body's Immunoglobulins, it is the main antibody in the secretions; it is found in areas of the body such as the nose , trachea , the digestive system , the ears , the eyes , vagina, saliva, tears and blood.

D - IgD:

Do not know its job well present in small quantities in the tissues lining the abdomen or chest.

E - IgE:

The IgE are found in the lungs, skin, and mucous membranes, it's the main component in the formation of allergy.

Cells of the Immune System:

1 - Antigen Presenting Cells:

They are Monocytes and Macrophages and Hans Langer cells in the skin and other cells and these take antigens and put it on the surface of these cells and the ability to secretion of Interleukin-1. **figure (2)**

2 - Lymphocyte T Cells:

Found in the blood of 80% of the Lymphocyte, **figure (2)**, working on the analysis of virus-infected cells and cancer cells is also working to organize the cells of the immune system and is divided into two parts:

- T helper cells (Th):

Carry on their surface receptors CD4, and CD3, CD2.

- T cytotoxic cells (TC):

Carry on their surface receptors CD8, and CD3, CD2

3 - Lymphocyte B Cells:

Blood found in almost 15% of Lymphocyte containing surface Immunoglobuline.

4 - Natural Killer Cells:

Cells are lymphocytes oversize ,Granular form, a toxic cells against virus-infected cells or tumor cells, and others.

5 - Granular Leukocytes:

Species include Neutrophils, Eosinophils, Basophils these cells essential function is to the defend the body against invading antigens (e.g. germs). **figure (2)**

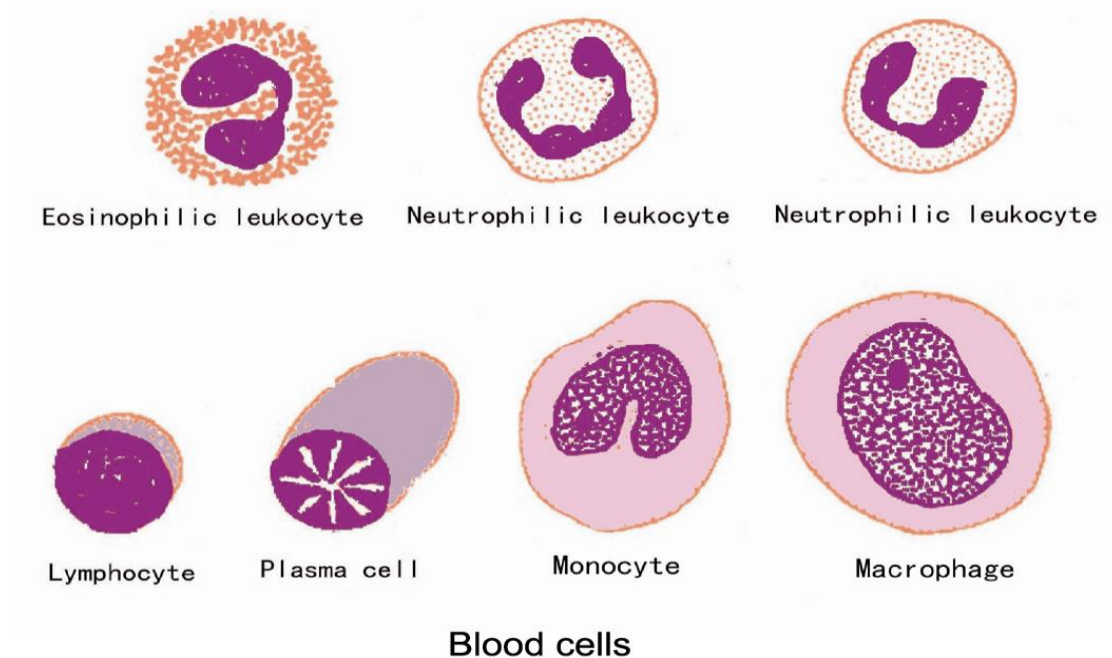


Figure (2):BLOOD CELL

Practical Immunology _____ **LAB-1-**
