

White blood cells essay sample

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White Blood Cells

Introduction

The white blood cells are an immune system created to defend the body against foreign invaders. Such invaders are microorganisms such as parasites and germs. White blood cells are able to distinguish between what the body requires and what it does not need so that they can defend the body from foreign bodies (Mader, 2007).

There are different types of white blood cells each with its function

Macrophages

They are white blood cells formed from the differentiation of monocytes tissues. They work in both the inborn resistance and adaptive immunity. Their responsibility is to engulf and digest pathogens and cellular debris. These cells also kindle lymphocytes and other resistant cells so that they can counter to disease causing microbes. They are focused for attacking any foreign substances, cancer cells and infectious microbes in the body by destroying and digesting them. An important role of these cells is to remove necrotic cellular debris in the lungs. Macrophages are cells that act as scavengers by riding the body off worn out cells. They perform the vital function of initiating and regulating an immune system response. These cells are formed at strategic locations such as the liver, bone, spleens, and lungs (Bagge & Born, 1982).

Neutrophils

These are the most common form of white blood cells found in the stream of blood. These cells are the first ones when it comes to protecting the body from infections by ingesting foreign cells and bacteria. These cells are made of granules that secrete enzymes, which assist in killing and digesting these foreign cells. Neutrophils move around in the blood stream, and they must receive a signal that alerts them to leave the blood stream and enter body tissues. The bacteria and foreign bodies are the ones that provide the signals by producing substances that attract the neutrophils cells. Neutrophils cells also produce substances that secrete fibers in the surrounding tissues. These fibers help in trapping bacteria and prevent them from spreading thus becoming easy to destroy (Mader, 2007).

Eosinophils

These types of white blood cells have the capability of ingesting bacteria, but they can also target foreign cells, which cannot be ingested. These cells contain granules, which are responsible for secreting enzymes and toxic substances whenever they encounter foreign cells. Eosinophils cells play a role of destroying cancer cells. They also release chemical substances that invoke allergic reactions. People with allergies always have higher percentages of eosinophils. Eosinophils cells revolve in the blood stream. However, when it comes to attacking bacteria, they are less active as compared to neutrophils and macrophages. Therefore, their primary role is to attach and assist in immobilizing and killing of parasites (Bagge & Born, 1982).

Basophils

These are white blood cells, which do not ingest foreign cells. They are made of granules, which are rich in histamine. Histamine is highly involved in allergic reactions. When Basophils cells come across allergens, they produce histamine. Histamine increases the rate at which blood flows to the damaged tissues of the body. Basophils cells are also responsible for releasing substances that cause attraction of neutrophils to the troubled area (The White Stripes, 2008).

Natural Killer Cells

These cells are referred to as the natural killer cells because they are always ready to kill as soon as they are created. They work by attaching themselves to the bacteria and foreign cells, after attaching themselves, they then produces enzymes and substances that cause damage to the outer membranes of the foreign cells. They kill certain cancer cells, cells infected by viruses and microorganisms. Therefore, these white blood cells are vital in the initial defense against viral infections (Mader, 2007).

References

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