International Scholars Journals

International Journal of Microbiology Research and Review ISSN 2329-9800 Vol. 10 (2), p. 001, September, 2021.
Available online at www.internationalscholarsjournals.com © International Scholars Journals



*Editorial*

# Elaborative note on immunology and immune system

**Yu Xiao Wei***

Department of Immunology, Omar Al-Mukhtar University, Al-Bayda, Libya.

Accepted 09 September, 2021

## EDITORIAL NOTE

Immunology deals with studies related to different aspects of the immune system like the structure, cells, response against antigens, function, and disorders, in all organisms; it is also an emerging branch of medical science. The immune system consists of chemicals process collection of cells, and mechanism that aim to protect foreign antigens from the body, such as microbes (organisms such as, parasites, bacteria, and fungi), cancer cells, viruses, and toxins, the immune system consists of two lines of defense; adaptive immunity and innate immunity.

Innate immunity is the first line of defense and rapid defense against the antigen, and it is an independent- antigen defense mechanism used by the host within hours of encountering an antigen.

It has no memory cell, reacts and recognizes against microbes only, and also eliminates succeeded microbes that entered the host. Three types of barriers are present they are Physical barriers, Chemical barriers, and Mechanical barrier. On other hand, adaptive immunity is second-line defense and also antigen-specific, antigen-dependent therefore, includes a lag time between maximal response and antigen exposure. This has memory cells that remember microbes on re-exposure and it gives a strong immune response whereas these are specific to microbes & antigens (can differentiate Antigen). Cells of adaptive immunity are of 2 types they are B lymphocyte which produces antibodies that neutralize and eliminate extracellular microbes and toxins (humoral immunity) and the other cell is T lymphocyte which eradicates intracellular microbes (cell-mediated immunity).

Immunology studies are related to the measurement of physiological functioning of the immune system in both disease and health conditions, in the case of disorders malfunctioning of the system, chemical, physical, and physiological characteristics of the cells of the immune system. Immunology has fast become an important aspect of clinical medicine as it has a deep relationship with oncology, organ transplantation, bacteriology, virology, and even dermatology. Immunology focuses on certain organs of the body like the lymphatic system, bone marrow, and the white blood cells found in the blood. The organs or cells producing cells are responsible, directly or indirectly, for the defense mechanism of the body against other antigens or pathogenic agents cells keep on circulating throughout the body via lymph or blood so that they can detect antigens entering the body from different sources. An important branch of immunology is immunotherapy, where components of the antigens or immune system are used to treat a disorder or disease as a form of treatment.

The immune system has different forms and types of cells whereas the hematopoitic stem cells in the bone marrow are divided into 2 types of cells called as the lymphoid stem cell and the myeloid progenitor. A lymphoid stem cell is further divided into lymphocytes; whereas lymphocytes are subdivided into T lymphocyte, B lymphocyte, and NK cells. T lymphocyte is divided into a plasma cell and memory cell and B lymphocyte are divided into Th cell and Tc cell. Myeloid progenitor is further divided into granulocytes whereas granulocytes are subdivided into neutrophil, eosinophil, basophil, mast cells, and monocytes. Monocyte is divided into dendritic cell and macrophage.

*Corresponding author. Yu Xiao Wei, E-mail: YW.Xiao@hotmail.com.