

INTERDISCIPLINARY INTEGRATION BETWEEN INNATE AND ADAPTIVE IMMUNE SYSTEM

Gabriella Medeiros Cruz¹
Victoria Lawrence de Moraes²
Victoria Barbosa³
Leticia Gabriele Pereira Lopes⁴
Ana Jeniffer Martins Pereira⁵
Bruno Henrique da Silva⁶
Ianca Gontijo Cavalcante Santana⁷
Poliana Lucena Nunes⁸

The immune system, also called the immune system, is what ensures protection to our body, preventing foreign substances and pathogens from negatively affecting our health. It is a complex system that involves a series of cells and organs that function, together, as a large protective barrier. Innate immunity acts in conjunction with adaptive immunity and is characterized by rapid response to aggression, regardless of previous stimulus, being the body's first line of defense. Its mechanisms comprise physical, chemical, and biological barriers, cellular components, and soluble molecules. The first defense of the organism against tissue damage involves several steps that are closely integrated and constituted by the different components of this system. This system is composed of several cells. Among them are dendritic cells, specialized in the capture and presentation of antigens to lymphocytes, are considered a bridge between innate and adaptive immunity, because they are attracted and activated by elements of the innate response and enable the sensitization of TL of the adaptive immune response. Macrophages, monocytes constitute 3% to 8% of circulating leukocytes and, in the connective tissue or parenchyma of organs, give rise to macrophages and myeloid dendritic cells. Monocytes and macrophages are efficient phagocytes, engulfing pathogens, and cellular debris. Neutrophils are the most abundant leukocytes in peripheral blood, with an important role in the early stages of inflammatory reactions and sensitive to chemotactic agents as cleavage products of complement fractions (C3a and C5a) and substances released by mast cells and basophils. Natural Killer Cells Natural Killer (NK) cells originate in the bone marrow, from a common progenitor to LTs, constituting 5% to 20% of the mononuclear cells in the blood. They are an important nonspecific line of defense, recognizing and lysing cells infected by viruses, bacteria, and protozoa, as well as tumor cells. Mast cells are cells derived from CD34+ hematopoietic progenitors in the bone marrow and are generally not found in the circulation. Basophils are granulocytes derived from progenitors in the bone marrow, where they mature, constituting less than 1% of peripheral blood leukocytes. And lastly the eosinophils granulocytes. Eosinophils are important cells in fighting infections, and their antiparasitic action (helminths) is one of the most potent and effective in the body. However, these are the main characteristics of the innate and adaptive immune response.

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¹ Undergraduate student of the Pharmacy Course, Universidade Evangélica de Goiás - Campus Ceres, E-mail: gabriellamedeirosscruz2020@gmail.com

² Undergraduate student of the Pharmacy Course, Universidade Evangélica de Goiás - Campus Ceres, E-mail: vitorialou6@gmail.com

³ Undergraduate student of the Pharmacy Course, Universidade Evangélica de Goiás - Campus Ceres, E-mail: vitoria_marques_barbosa@hotmail.com

⁴ Undergraduate student of the Pharmacy Course, Evangelical University of Goiás - Ceres Campus, E-mail: letylopes424@gmail.com

⁵ Undergraduate student of the Pharmacy Course, Universidade Evangélica de Goiás - Campus Ceres, E-mail: martinsanajeniffer@gmail.com

⁶ Specialist in Microbiology, Universidade Evangélica de Goiás - Campus Ceres, E-mail: profhenrique@gmail.com

⁷ Master in Pharmaceutical Sciences, Universidade Evangélica de Goiás - Campus Ceres, E-mail: ianca.santana@unievangélica.edu.br

⁸ PhD in Sciences – Tropical Medicine and Infectology, Evangelical University of Goiás, E-mail: poliana.nunes@unievangélica.edu.br