OPEN ACCESS Freely available online

ISSN: 0974-8369
Biology and Medicine

Opinion Article

Mechanism and Role of Leukocytes in Cancer

Harry Gasper*

Division of Oncology, German Cancer Research Center, Heidelberg, Germany

DESCRIPTION

Leukocytes are also known as white blood cells play a crucial role in the immune system's defense against cancer. The immune system's primary function is to identify and eliminate foreign substances, including cancer cells. Leukocytes are an essential component of the immune system and are responsible for recognizing and destroying cancer cells. Cancer is a disease that occurs when abnormal cells grow and divide uncontrollably. These cells can invade nearby tissues and organs, and they can spread to other parts of the body through the bloodstream or lymphatic system. Cancer cells often develop mechanisms to evade the immune system, allowing them to grow and spread unchecked.

Leukocytes are responsible for detecting and destroying cancer cells through a process known as immunosurveillance. There are several types of leukocytes involved in this process, including natural killer cells, T cells, and B cells. Natural killer cells are a type of leukocyte that can identify and destroy cancer cells without prior exposure. They can recognize changes in the surface of cancer cells that make them different from healthy cells. Once a natural killer cell detects a cancer cell, it releases toxic substances that can cause the cancer cell to die. T cells are another type of leukocyte that play a crucial role in the immune response to cancer. They can recognize cancer cells that display abnormal proteins on their surface, known as antigens. Once a T cell recognizes a cancer cell, it can either directly kill the cancer cell or stimulate other cells in the immune system to attack the cancer cell. B cells are a type of leukocyte that produces antibodies in response to antigens. Antibodies are proteins that can recognize and bind to specific antigens. Once an antibody binds to an antigen on a cancer cell, it can signal other cells in the immune system to attack the cancer cell. They also play an important role in the process of immunotherapy, a type of cancer treatment that harnesses the power of the immune system to fight cancer. Immunotherapy can work in several ways, including by activating T cells to attack cancer cells, by blocking proteins that inhibit the immune response to cancer, or by using genetically modified immune cells to target cancer cells.

One type of immunotherapy that has shown promise in the treatment of cancer is checkpoint inhibitor therapy. Checkpoint inhibitors are drugs that block proteins on the surface of T cells that inhibit their activity. By blocking these proteins, checkpoint inhibitors can activate T cells to attack cancer cells. Checkpoint inhibitor therapy has been approved for the treatment of several types of cancer, including melanoma, lung cancer, and bladder cancer. They also play an important role in process of CAR-T cell therapy, a type of immunotherapy that uses genetically modified T cells to target cancer cells. CAR-T cells are T cells that have been modified in the laboratory to express Chimeric Antigen Receptors (CARs) on their surface. These receptors can recognize specific antigens on cancer cells, allowing the CAR-T cells to target and destroy cancer cells. In CAR-T cell therapy, T cells are removed from a patient's blood and modified in the laboratory to express CARs. The modified T cells are then infused back into the patient, where they can recognize and attack cancer cells. CAR-T cell therapy has been approved for the treatment of several types of blood cancer, including leukemia and lymphoma. Immunotherapy, including checkpoint inhibitor therapy and CAR-T cell therapy, has shown promise in the treatment of cancer by harnessing the power of the immune system to target cancer cells.

Correspondence to: Harry Gasper, Division of Oncology, German Cancer Research Center, Heidelberg, Germany, E-mail: Harry@health.qnd.gov.de

Received: 27-Mar-2023, Manuscript No. BLM-23-21233; **Editor assigned:** 30-Mar-2023, Pre QC No. BLM-23-21233 (PQ); **Reviewed:** 14-Apr-2023, QC No. BLM-23-21233; **Revised:** 21-Apr-2023, Manuscript No. BLM-23-21233 (R); **Published:** 28-Apr-2023, DOI: 10.35248/0974-8369.23.15.556.

Citation: Gasper H (2023) Mechanism and Role of Leukocytes in Cancer. Bio Med. 15:556.