



**ACROSS**

- 1 The \_\_\_\_\_ system is a collection of mechanisms within the body that protects against disease by identifying and killing pathogens and tumor cells.
- 3 \_\_\_\_\_ is a biogenic amine involved in local immune responses as well as regulating physiological function in the gut and acting as a neurotransmitter.
- 8 The \_\_\_\_\_ immune response provides the vertebrate immune system with the ability to recognize and remember specific pathogens.
- 10 The \_\_\_\_\_ duct is the largest lymphatic vessel in the body, collecting most of the lymph in the body and draining into the systemic circulation at the left subclavian vein
- 12 A \_\_\_\_\_ is a cell that ingests and destroys foreign matter such as microorganisms or debris.
- 14 The major \_\_\_\_\_ complex (MHC) is a large gene family found in most vertebrates, the most gene-dense region of the mammalian genome, which plays an important role in the immune system, autoimmunity, and reproductive success.
- 15 A \_\_\_\_\_ is the detrimental

colonization of a host organism by a foreign species.

- 20 The \_\_\_\_\_ immune system comprises the cells and mechanisms that defend the host from infection by other organisms, in a non-specific manner.
- 21 A \_\_\_\_\_ is a nonparasitic antigen capable of stimulating a type I hypersensitivity reaction in atopic individuals.
- 26 Lymph \_\_\_\_\_s are components of the lymphatic system that contain white blood cells and act as filters or traps for foreign particles.
- 28 The \_\_\_\_\_ system is a complex network of lymphoid organs, lymph nodes, lymph ducts, tissues, lymph capillaries and lymph vessels that produce and transport lymph fluid from tissues to the circulatory system.
- 29 \_\_\_\_\_s are a family of small, signaling proteins and glycoproteins particularly important in both innate and adaptive immune responses.
- 30 \_\_\_\_\_ or immunoglobulins are proteins used by the immune system to identify and neutralize foreign objects, such as bacteria and viruses.
- 31 \_\_\_\_\_ is an abnormal reaction to a substance foreign to the body that is acquired, predictable and

rapid.

- 33 \_\_\_\_\_ granulocytes are white blood cells of the immune system that are responsible for combating infection by parasites in vertebrates
- 34 Antigen \_\_\_\_\_ is a process in the body's immune system by which macrophages, dendritic cells and other cell types capture antigens and then show them for recognition by T-cells.
- 35 \_\_\_\_\_ blood cells or leukocytes are cells of the immune system which defend the body against both infectious disease and foreign materials.
- 36 The T cell \_\_\_\_\_ is a molecule found on the surface of T lymphocytes that is generally responsible for recognizing antigens bound to major histocompatibility complex molecules.

**DOWN**

- 2 \_\_\_\_\_s are the most abundant type of white blood cells, phagocytes that quickly congregate at a focus of infection, attracted by cytokines expressed by activated endothelium, mast cells and macrophages.
- 4 \_\_\_\_\_ signalling is a form of hormonal signalling in which a cell

secretes a hormone, or chemical messenger, that binds to receptors on the same cell.

- 5 \_\_\_\_\_ B cells are a B cell subtype that are formed following primary infection. They remember the same pathogen for faster antibody production in future infections
- 6 A \_\_\_\_\_ or infectious agent is a biological agent that causes disease or illness to its host.
- 7 A \_\_\_\_\_ is the part of a macromolecule that is recognized by the immune system, specifically by antibodies, B cells, or T cells.
- 9 Lymph \_\_\_\_\_s are thin walled, valved structures that carry lymph.
- 11 \_\_\_\_\_ is the complex biological response of vascular tissues to harmful stimuli, such as pathogens, damaged cells, or irritants.
- 12 \_\_\_\_\_ signaling is a form of cell signaling in which the target cell is close to the signal releasing cell.
- 13 Natural \_\_\_\_\_ cells are a form of cytotoxic lymphocyte which constitute a major component of the innate immune system.
- 14 The \_\_\_\_\_ immune response is the aspect of immunity that is mediated by antibodies, produced by the cells of the B lymphocyte lineage.
- 16 A \_\_\_\_\_ T cell belongs to a subgroup of T lymphocytes which are capable of inducing the death of infected somatic or tumor cells.
- 17 A \_\_\_\_\_ or immunogen is a molecule that stimulates an immune response.
- 18 Not involving antibodies, \_\_\_\_\_-mediated immunity is an immune response involving the activation of macrophages, natural killer cells, cytotoxic T-lymphocytes, and the release of various cytokines in response to an antigen.
- 19 \_\_\_\_\_ cells are cells of the immune system that secrete large amounts of antibodies.
- 22 \_\_\_\_\_ T cells, sometimes known as suppressor T cells, act to suppress activation of the immune system and thereby maintain immune system homeostasis and tolerance to self-antigens.
- 23 A \_\_\_\_\_ is an abnormal growth or mass of tissue.
- 24 The \_\_\_\_\_ is an organ located in the abdomen of the human body, where it carries out immune functions as well as functions concerned with the destruction of old red blood cells.
- 25 Monocytes and \_\_\_\_\_s are phagocytes, acting in both innate immunity as well as cell-mediated immunity of vertebrate animals.
- 27 The \_\_\_\_\_ system is a biochemical cascade which helps clear pathogens from an organism consisting of a number of small proteins found in the blood, normally circulating as inactive zymogens.
- 32 With no cytotoxic or phagocytic activity, T \_\_\_\_\_ cells are a sub-group of lymphocytes playing an important role in establishing and maximizing the capabilities of the immune system.