HUMAN IMMUNITY

Shodiyeva Dildora G‘iyosovna
SamSMU, Assistant of the Department of Microbiology,
Virology and Immunology dildoraannayeva786@gmail.com

Xoljigitov Xushnud Toshtemir o‘g‘li
student of SamSMU

ABSTRACT

The purpose of our scientific work was about the protective functions of the human body against foreign microorganisms and foreign genes and the specific features of this system. we studied immune damage.

Keywords*. Immunity, Lymphocyte, neutrophils, leukocyte, autoimmune reactions, allergy, antigen, antibody, antitoxin.*

Introduction The human immune system fights against pathogenic organisms and foreign damage. The recognition and elimination of these potentially diverse pathogens is a complex multi-step process. To make this production, the animals went through a complex and powerful movement. This defense can be in the cell or fluid. *The operation of this system can be found all over the world.* These systems work in combination with their activities. We can correct the use of immunity as the regulation of homeostasis. Because the immune system does not function normally, gameostasis is disturbed. If we study this system at the capacity level, we will not be able to eliminate its problems. When a pathogenic organism wants to enter the body, it first resists the skin that covers our body. The skin has such a complex structure that no germs can pass through intact skin. The reason for this is several layers of dead cells. Since the growing skin grows towards the layer where the base is sewn, the microbe on the skin is not introduced into the body. Sebaceous glands on the skin produce a permanent rash. Under the influence of secretion, an acidic environment is formed in the skin. Under the influence of this environment, pathogenic and non-pathogenic microorganisms die. Microbes can get into the human body through several natural openings or by the way. When the microbe falls through the mucous membrane, it is destroyed by salivary lysozyme. The glandular cells in the walls of the passageways produce special mucus microbes that correspond to the body itself. The next protective part of the digestive tract is provided. We know that juice contains HCl, i.e., hydrochloric acid, under the influence of which microbes dissolve. But not 100% of

any protection. Most intestinal bacteria, such as chelicobactera, cannot be killed by hydrochloric acid, preventing acid formation. Many pathogens can enter the body through sexual contact. Once the microorganism enters the tissue, they encounter the immune system.

The topic is literature analysis *Innate immunity* Innate immunity is passed from the mother to the child through the placenta. Innate immunity passes in the form of ready-made immunoglobulins. a new patient will help him for several months. There are complements in the blood, under the influence of which microbes are neutralized. More than 20 of them have been identified and 9 of them have been studied (C1-C9). Excipients have a special effect that increases and kills microbes. The human body contains special secretory immunoglobulin A and interferon from lysozyme and complement, which form immunity. Most pathogenic microorganisms entering the body undergo phagocytosis with the participation of special cells. Macrophages and neutrophils are taken from those cells. *Macrophages* Macrophages are an immune system important for the development of specific defense mechanisms that provide the first line of defense against pathogens. These purulent cells are present in all direct immunity, they increase the active growth of dead and damaged cells, bacteria, them and the soil in the cells. Macrophages are known as phagocytes in the process of engulfing and digesting cells and pathogens. Thanks to macrophages, the cell helps to adapt by delivering and helping with immunity by neutralizing information about foreign antigens. This makes the immune system more secure against further attacks by those invaders. In addition, macrophages are involved in other valuable tasks in the body, such as hormone production, homeostasis, immune regulation, and wound healing. *Phagocytosis* Phagocytosis allows macrophages to get rid of harmful or unwanted substances in the body. Phagocytosis is a form of endocytosis that ends with the uptake and destruction of a substance by a cell. This process begins when the macrophage is attracted by the presence of foreign antibodies. Antibodies are proteins produced by lymphocytes bound to a foreign substance (antigen). After detecting the antigen, the macrophage sends projections that surround and shed the antigen (surrounding bacteria, dead cells, etc.).

Result and discussion The engulfed vesicle containing the antigen is called a phagosome. Lysosomes inside the macrophagus form phagolyses with phagosomes. Lysosomes are membranous envelopes of hydrolysis enzymes formed by the Golgi complex capable of digesting organic substances. The enzyme content of lysosomes is reduced to phagolysis, and foreign substances are quickly destroyed. *Damaged substances are removed from the macrophage. Neutrophils* Neutrophils released from the blood from the bone marrow move in two groups during their movement. 50% of them circulate in the peripheral blood. The remaining 50% is in closed small blood

vessels, closed capillaries, venules, attached to endothelial cells of anastomotic structures. There is a constant exchange between these two groups of neutrophils. In addition, the bone marrow stores a reserve of 100 mature neutrophils for every neutrophil circulating in the blood. When neutrophils in the blood die, granulocyte-inducing factor is activated, or cortisol increases, these reserve neutrophils are released into the peripheral blood in large numbers. After granulocytes are released from the bone marrow, they circulate in the peripheral blood for 8-10 hours before moving to the tissues and never returning from the tissue to the blood. A neutrophil that has migrated to a tissue performs its function in the tissue. If they do not participate in the process of phagocytosis, they will age and die after 4-5 days. Dead granulocytes are broken down by tissue macrophages. In acute infectious diseases, the life of neutrophils can be shortened to several hours. A large amount of the remains of dead neutrophils is excreted through the intestines together with feces or in respiratory secretion processes. B-lymphocytes are produced in the bone marrow, but further differentiation occurs in the lymphoid tissue of the intestine, larynx, palate, and larynx. In birds, these lymphocytes are called B because they develop in the bursa.They make up 20-30% of lymphocytes. The main function of B lymphocytes is to create humoral immunity by producing antibodies. After encountering antigens, B lymphocytes go to the spleen, spleen, and lymph nodes to proliferate and become plasma cells. Plasma cells are responsible for the production of gamma globulins of immunity. B lymphocytes themselves: B killers, B helpers, B suppressors and immunological memory cells are distinguished.

Conclusion

After T-lymphocytes are synthesized in the bone, they are processed in the thymus and form cellular immunity. They make up 40-70% of all lymphocytes. T lymphocytes directly carry out cellular immune reactions. They destroy foreign cells, including tumor cells, foreign transplant cells and mutant cells by phagocytosis, and perform genetic homeostasis. T lymphocytes produce immune mediators called lymphokines and act as immune memory. T lymphocytes are also divided into several types: T killers - attack foreign cells (antigens) and destroy them, i.e. carry out a cellular immune reaction. T helpers (helpers) facilitate the occurrence of cellular and humoral immunity. T suppressors suppress the overreaction of B lymphocytes by blocking them. Another type of lymphocytes, memory cells, has the task of remembering the antigen and providing a reliable defense if it appears in the body a second time. Natural killers (NK) form the cell's innate immunity. In this, NK cells kill any IgG-coated cells. This process is called antigen-binding cell-mediated cytotoxicity. NK cells have a high cytotoxic effect on tumor cells and virus-infected cells

REFERENCES

1. *Annayeva, D. (2022). CICHORIUM INTYBUS LISOLATION OF ENDOPHYTIC MICROORGANISMS FROM PLANTS AND IDENTIFICATION OF BIOTECHNOLOGICAL POTENTIAL. Eurasian Journal of Medical and Natural Sciences, 2(6), 54–61. извлечено от https://www.in-academy.uz/index.php/EJMNS/article/view/1755*
2. *Annayeva, D. G. Y., Azzamov, U. B., & Annayev, M. (2022). ODDIY SACHRATQI (CICHORIUM INTYBUS L) O'SIMLIGIDAN ENDOFIT MIKROORGANIZMLAR AJRATIB OLISH. Oriental renaissance: Innovative, educational, natural and social sciences, 2(5-2), 963-972. https://cyberleninka.ru/journal/n/oriental-renaissance-innovative-educational-natural-and-social-sciences*
3. *Azimovich, A. U. B., G'iyosovna, S. D., & Zokirovna, M. M. (2022). XLAMIDIYANING INSON SALOMATLIGIGA TA'SIRINI MIKROBIOLOGIK TAHLILLI VA DIOGNOSTIKASI. Talqin va tadqiqotlar ilmiy-uslubiy jurnali, 1(11), 153-161. https://doi.org/10.5281/zenodo.7305057*
4. *Giyosovna, S. D. (2023). ODDIY SACHRATQI (CICHORIUM INTYBUS L) O'SIMLIK QISMLARIDAN ENDOFIT BAKTERIYALARNING SOF KULTURALARINI AJRATISH USULLARI. Новости образования: исследование в XXI веке, 1(6), 387-393. http://nauchniyimpuls.ru/index.php/noiv/article/view/3573*
5. *Shodiyeva, D. (2023). BIO-MORPHOLOGICAL CHARACTERISTICS, GEOGRAPHICAL DISTRIBUTION AND USE IN TRADITIONAL MEDICINE OF CICHORIUM INTYBUS. GOLDEN BRAIN, 1(2), 252-256. https://researchedu.org/index.php/goldenbrain/article/view/1337*
6. *Shodiyeva, D. (2023). SANOAT MIKROBIOLOGIYASINING BIOTEXNOLOGIYADAGI AHAMIYATI. GOLDEN BRAIN, 1(2), 116-120. https://researchedu.org/index.php/goldenbrain/article/view/1310*
7. *Shodiyeva, D. (2023). INDOLIL SIRKA KISLOTA MIQDORINI ANIQLASH. GOLDEN BRAIN, 1(2), 321-324. https://researchedu.org/index.php/goldenbrain/article/view/1361*
8. *Dildora, S. (2023). CICHORIUM INTYBUSDAN OLINGAN BACILLUS AVLODIGA MANSUB BAKTERIYALARINING BIOTEXNOLOGIK POTENSIALI VA MIKROBIOLOGIYADAGI ISTIQBOLLARI. O'ZBEKISTONDA FANLARARO INNOVATSIYALAR VA ILMIY TADQIQOTLAR JURNALI, 2(15), 726-732. https://bestpublication.org/index.php/ozf/article/view/3359*

9. Annayeva, D. G. Y., Azzamov, U. B., & Annayev, M. O. S. (2022). O'SIMLIGIDAN ENDOFIT MIKROORGANIZMLAR AJRATIB OLISH.

10. Dildora, S., & Mekhriniso, B. (2023, January). APPLICATION AREAS OF BIOLOGICALLY ACTIVE METABOLITES PRODUCED BY ENDOPHITE BACTERIA. In E Conference Zone (pp. 92-95). http://www.econferencezone.org/index.php/ecz/article/view/1941

11. Shodiyeva Dildora, & Bobakandova Mekhriniso. (2023). APPLICATION AREAS OF BIOLOGICALLY ACTIVE METABOLITES PRODUCED BY ENDOPHITE BACTERIA. E Conference Zone, 92–95. Retrieved from http://www.econferencezone.org/index.php/ecz/article/view/1941

12. Жамалова , Ф. А., Болтаев , К. С., & Шодиева , Д. Г. (2023). ВОЗБУДИТЕЛИ МИКОЗОВ СЛЕПНЕЙ НА ТЕРРИТОРИИ РАЗЛИЧНЫХ РЕГИОНОВ УЗБЕКИСТАНА. GOLDEN BRAIN, 1(3), 28–34. Retrieved from https://researchedu.org/index.php/goldenbrain/article/view/1465

13. Makhmudova Zakro Vahobovna, Shodiyeva Dildora, & Olimjonova Sadokat Gulomjon's daughter. (2023). BIOLOGY AND BIOTECHNOLOGY OF ENDOPHITE MICROORGANISMS. World Bulletin of Public Health, 18, 115-117. Retrieved from https://scholarexpress.net/index.php/wbph/article/view/2074

14. Olimjonova , S. G. qizi, & Shodiyeva , D. G. (2023). BAKTERIYALARNI SUYUQ VA QATTIQ OZUQA MUHITLARIDA O'STIRISH SHAROITLARI. GOLDEN BRAIN, 1(3), 182–188. Retrieved from https://researchedu.org/index.php/goldenbrain/article/view/1496

15. Shodiyeva , D. G., & Annayev , M. G. o'g'li. (2023). DOMINANT MICROORGANISMS IN CICHORIUM INTYBUS. GOLDEN BRAIN, 1(3), 175–181. Retrieved from https://researchedu.org/index.php/goldenbrain/article/view/1492

16. G'iyosovna, S. D. (2023). ODDIY SACHRATQI (CICHORIUM INTYBUS L) O'SIMLIGIDAN ENDOFIT MIKROORGANIZMLAR AJRATISH VA ULARNING BIOTEXNOLOGIK POTENSIALINI BAHOLASH. https://researchedu.org/index.php/goldenbrain/article/view/1506

17. Shodiyeva , D. G. (2023). ODDIY SACHRATQI (CICHORIUM INTYBUS L) O'SIMLIGIDAN ENDOFIT MIKROORGANIZMLAR AJRATISH VA ULARNING BIOTEXNOLOGIK POTENSIALINI BAHOLASH. GOLDEN BRAIN, 1(3), 230–240. Retrieved from https://researchedu.org/index.php/goldenbrain/article/view/1506

18. Shodiyeva Dildora G'iyosovna, & Tohirova Jayrona Izzatullayevna. (2023). VAKSINA OLISH TEXNALOGIYASI VA UNING AHAMIYATI. GOLDEN BRAIN, 1(3), 256–260. https://doi.org/10.5281/zenodo.7605291

19. Boltayev , K. S., Jamalova , F. A., & Shodiyeva , D. G. (2023). MIKOZLARGA MIKROBIOLOGIK MIKROSKOPIK TASHXIS QO'YISHNING O'ZIGA XOS

XUSUSIYATLARI. GOLDEN BRAIN, 1(3), 35–40. Retrieved from https://researchedu.org/index.php/goldenbrain/article/view/1466

20. Shodiyeva , D. G., Jamalova , F. A., & Boltayev , K. S. (2023). BACILLUS THURINGIENSIS BAKTERIYALAR ASOSIDA YARATILGAN BIOPREPARATLAR. GOLDEN BRAIN, 1(3), 23–27. Retrieved from https://researchedu.org/index.php/goldenbrain/article/view/1464

21. Hamza, S., Muzaffar, A. ., Dildora, S., & Ulug`bek, A. . (2023). BACILLUS THURINGINGIENSIS BAKTERIYA SHTAMMLARINING PHASEOLUS VULGARIS O`SIMLIGI BIOMETRIK KO`RSATKICHLARIGA VA RIVOJLANISHIGA TA`SIRI. Scientific Impulse, 1(6), 327–332. Retrieved from http://nauchniyimpuls.ru/index.php/ni/article/view/4355

22. Shodiyeva, D. G., Shernazarov, F. F. o'g'li, & Tohirova, J. I. qizi. (2023). BAKTERIYALARNING IKKILAMCHI BIOLOGIK FAOL METABOLITLAR SINTEZ QILISH XUSUSIYATLARI VA ULARNING FARMASEVTIKADA QO'LLANILISHI. RESEARCH AND EDUCATION, 2(1), 269–276. Retrieved from https://researchedu.org/index.php/re/article/view/1455

23. Azimovich, A. U. B., G'iyosovna, S. D., & Akmalovich, M. A. (2023). ANTIBIOTIKLAR TA'SIR DOIRASIGA KO'RA KLASSIFIKATSIYASI. Talqin va tadqiqotlar ilmiy-uslubiy jurnali, 1(17), 245-251. https://cyberleninka.ru/article/n/antibiotiklar-tasir-doirasiga-kora-klassifikatsiyasi

24. Azimovich, A. U. B., & G'iyosovna, S. D. (2023). O 'SIMLIK O 'SISHI VA RIVOJLANISHIDA FOYDALI MIKROORGANIZMLARNING AHAMIYATI. Talqin va tadqiqotlar ilmiy-uslubiy jurnali, 1(17), 257-260. https://cyberleninka.ru/article/n/o-simlik-o-sishi-va-rivojlanishida-foydali-mikroorganizmlarning-ahamiyati

25. Shodiyeva D., Ashirov F., Murodova A. EFFECT OF BACILLUS THURINGIENSIS BACTERIAL STRAINS ON PHASEOLUS VULGARIS PLANT BIOMETRIC INDICATORS AND DEVELOPMENT //Science and innovation. – 2023. – T. 2. – №. D2. – C. 49-56. https://cyberleninka.ru/article/n/effect-of-bacillus-thuringiensis-bacterial-strains-on-phaseolus-vulgaris-plant-biometric-indicators-and-development

26. Shodiyeva D., Shernazarov F. ANALYSIS OF THE COMPOUNDS PROVIDING ANTIHELMITIC EFFECTS OF CHICHORIUM INTYBUS THROUGH FRACTIONATION //Science and innovation. – 2023. – T. 2. – №. D2. – C. 64-70. https://cyberleninka.ru/article/n/analysis-of-the-compounds-providing-antihelmitic-effects-of-chichorium-intybus-through-fractionation

27. Vahobovna , M. Z. ., G'ulomjon qizi, O. S. ., & G`iyosovna , S. D. . (2023). CICHORIUM INTYBUSNI AN`ANAVIY TIBBIYOTDA QO`LLANILISHI, FITOKIMYOVIY TARKIBI VA FARMAKOLOGIYADAGI AHAMIYATI. Scientific

Impulse, 1(6), 1386–1392. Retrieved from http://nauchniyimpuls.ru/index.php/ni/article/view/4776

28. Giyosovna, S. D. (2023). CICHORIUM INTYBUSDAN YANGI BIRIKMA OLISH VA ULARNING BIOLOGIK TASIRI. O'ZBEKISTONDA FANLARARO INNOVATSIYALAR VA ILMIY TADQIQOTLAR JURNALI, 2(16), 156-164.

29. Giyosovna, S. D., Mansur ogli, S. S., & Izzatullayevna, T. J. (2023). CICHORIUM INTYBUS KOCHATLARIDAN OLINGAN YANGI KISLOTA FOSFATLARINING KINETIK VA TERMODINAMIK TADQIQOTLARI. Новости образования: исследование в XXI веке, 1(7), 428-434.

30. Giyosovna, S. D., & Abdusalomovna, J. F. (2023). BACILLUS AVLODIGA MANSUB BAKTERIYALARNING ANTIMIKROB VA ANTOGONISTIK XUSUSIYATLARI. Scientific Impulse, 1(6), 1852-1858.

31. Bobakhandova Mekriniso Fazliddinovna, & Shodiyeva Dildora G'iyosovna. (2023). USAGE OF CICHORIUM INTYBUS IN TRADITIONAL MEDICINE, PHYTOCHEMICAL COMPOSITION AND IMPORTANCE IN PHARMACOLOGY. GOLDEN BRAIN, 1(5), 43–49. https://doi.org/10.5281/zenodo.7663888