

ROLE OF PHARMACEUTICAL TECHNOLOGIES IN MICROBIOLOGICAL LABORATORIES

Mardonova Mehinbonu Sunatillo qizi

mekhinbonumardonova@gmail.com

Urgut Abu Ali ibn Sino public health technical school, Samarkand region, teacher of clinical laboratory examination methods

Karimova Nargiza Tugalboyevna

nargizkarimova1984@gmail.com

Teacher of medical biology and general genetics at Urgut Abu Ali Ibn Sino Technical College of Public Health, Samarkand Region

Raximova Fotima Jabborberganovna

rustamshodiyev341@gmail.com

Samarkand region Urgut Abu Ali ibn Sino public health technical school, teacher of the science of pharmacology and the basics of prescription

Abstract: This article provides detailed information on the role of pharmaceutical technologies in microbiological laboratories. In particular, information about the role of microbiological laboratories in the pharmaceutical industry, microbiological tests and quality control, microbiology and biotechnology in pharmaceutical technologies, safety and quality assurance in microbiological laboratories is given.

Key words: Pharmaceutical industry, microorganisms, microbiological laboratories, pharmaceutical technologies, antimicrobial activity, pathogenic microorganisms

The relationship between the pharmaceutical industry and microbiology is very important, because microorganisms play a key role in the development and quality assurance of pharmaceutical products. Microbiological laboratories play an important role in quality control, safety and effectiveness evaluation of medicines, biotechnological products and other pharmaceutical preparations. This article examines the role of microbiological laboratories in pharmaceutical technologies and their role in detail.

1. The role of microbiological laboratories in the pharmaceutical industry

Microbiological laboratories are an integral part of pharmaceutical technologies. They are the main tool for checking the safety and quality of pharmaceutical products, as well as for studying microorganisms in the process of developing new drugs. Microbiological analyzes help to determine how drugs affect plant or animal organisms. In addition, laboratories are of great importance in identifying the presence

of microbes, bacteria or other pathogens in medicines and developing methods to combat them.

2. Microbiological tests and quality control

During the production and sale of pharmaceutical preparations, their microbiological safety and quality are strictly controlled. In microbiological laboratories, the sterilization process of drugs, the prevention of microbiological contamination, its preservation ability, as well as the possibility of contact with bacteria and other microorganisms during their storage period are important.

Pharmaceutical products using microbiological analysis:

- Antimicrobial activity,
- Identification of pathogenic microorganisms,
- To prevent the growth of microorganisms during long-term storage of the drug,
- It is possible to implement biological security.

3. Microbiology and biotechnology in pharmaceutical technologies

The convergence of biotechnology and microbiology provides an opportunity for the development of new and innovative pharmaceutical technologies. Microbiological laboratories also play an important role in the development of biotechnological products. These include medicines, vaccines and genetically modified products produced with the help of microorganisms. These products are evaluated for safety and efficacy using microbiological analyses.

Within pharmaceutical technologies, microbiological processes are aimed at:

- Identification and production of biologically active substances,
- Optimization of fermentation processes of microorganisms for pharmaceutical products,
- Creation of new medicines through genetic modification of microorganisms.

4. Ensuring safety and quality in microbiological laboratories

The importance of microbiological laboratories in ensuring the safety and quality of products manufactured in the pharmaceutical industry is incomparable. Microbiological laboratories are the main tool in determining the microbiological safety of all pharmaceutical products, that is, contamination by bacteria, viruses, fungi or other pathogenic microorganisms. Also, the laboratories control compliance with the sanitary and hygienic conditions of storage and transportation in the production of medicines.

5. Summary

Microbiological laboratories play an important role in the development and production of pharmaceutical technologies. With their help, it is possible to control the quality of medicines, vaccines, biotechnological products, ensure their safety and evaluate their

effectiveness. Also, microbiological analyzes play an important role in the creation of innovative technologies and their implementation in the process of developing new pharmaceutical products. Interactions between the fields of microbiology and pharmaceuticals are creating opportunities to start a new era in the field of medicine.

REFERENCES:

1. Shadiev R. et al. Correction to: Familiarization Strategies to Facilitate Mobile-Assisted Language Learning in Unfamiliar Learning Environments: A Study of Strategies Development and Their Validation //International Conference on Innovative Technologies and Learning. – Cham : Springer International Publishing, 2022. – C. C1-C1.
2. Fayziev M. A. Methods of formation of knowledge and skills of students on the basis of computer simulation model (on the example of the subject " Computer Science and Information Technology"): Dis.... Kand. ped. science //Tashkent: TDPU. – 2008.
3. Toshturdiyevna K. D., Asfandiyarovych F. M. FORMATION OF THE SPIRITUAL HERITAGE OF TEMURY QUEENS IN SCHOOL GIRLS ON THE BASIS OF PEDAGOGICAL TECHNOLOGIES //International Conference on Research Identity, Value and Ethics. – 2023. – C. 47-51.
4. Shadiev R. et al. Comparing effects of STR versus SELT on cognitive load //2019 Twelfth International Conference on Ubi-Media Computing (Ubi-Media). – IEEE, 2019. – C. 284-287.
5. Baigunissova G. et al. Flipped classroom method in higher education: a case of Kazakhstan //International Conference on Innovative Technologies and Learning. – Cham : Springer Nature Switzerland, 2023. – C. 232-241.
6. Shadiev R., Shadiev N., Fayziev M. Facilitating online cross-cultural learning project with speech-enabled language translation technology //2020 IEEE 20th International Conference on Advanced Learning Technologies (ICALT). – IEEE, 2020. – C. 223-225.
7. Shadiev R. et al. Cultivating Creativity of High School Students in Cross-Cultural Learning Project Based on VR Technology //International Conference on Innovative Technologies and Learning. – Cham : Springer Nature Switzerland, 2023. – C. 463-472.
8. Шадиев Р. Н. и др. Развитие межкультурной компетенции в виртуальной среде обучения //Технологические тренды и наукоемкая экономика: бизнес, отрасли, регионы. – 2021. – С. 312-319.
9. Shaimerdenova N. et al. Developing Reading Literacy with Digital Texts //International Conference on Innovative Technologies and Learning. – Cham : Springer Nature Switzerland, 2024. – C. 159-166.
10. Shadiev R. et al. Immersive Learning Environments: Fostering Self-directed Learning in Junior High School Students Through Virtual Tours //International Conference on Innovative Technologies and Learning. – Cham : Springer Nature Switzerland, 2024. – C. 67-76.