

Abstract of the educational training program of the discipline

Biological chemistry-biochemistry of the oral cavity

The main professional educational program of higher education - specialty program in the specialty 31.05.03 Dentistry, approved on 30.03.2022

Form of education: Full-time

The period of development: 5 years

Department: Biological chemistry

1. The purpose of the discipline: mastering knowledge about the molecular mechanisms of the physiological functions of the human body and their violations in pathological conditions, about the main patterns of metabolic processes that determine the state of health and human adaptation to changes in the external and internal environment, in the justification of the biochemical mechanisms underlying the diagnosis, prevention and treatment of diseases.

2. Place of discipline in the structure of the main professional educational program of higher education:

Discipline Biochemistry refers to the disciplines of the mandatory part of block 1 of the Federal state educational standard of higher education in the specialty 31.05.03 Dentistry

3. Requirements to results of development of discipline:

The teaching of this discipline is based on the following types of professional activity:

- medical
- research
- organizational and managerial
- pedagogical

The process of studying the discipline is aimed at the formation and development of competencies: GPC-5; GPC-8; GPC-9; UC-1; PC-1.

Indicators of competence achievement: AI -1, AI -2, AI-5, AI-15.

As a result of studying the discipline, the student must:

Know:

1. general laws of development of life, the functioning of the systems and metabolic processes occurring in the human body in health and disease, including processes occurring in the mouth;
2. new methods of biochemical diagnostics;
3. structure and properties of the major classes of biologically important compounds;
4. the main metabolic pathways of transformation,, the role of cell membranes, transport systems in metabolism in the human body.

Be able to:

1. apply the studied techniques to solve professional problems
2. use physical, chemical and biochemical equipment for the introduction of new methods for the diagnosis of human diseases, as well as the study of processes in the oral cavity.
3. apply the accumulated knowledge about the molecular foundations of biochemical processes for scientific research.

Own:

1. laboratory and chemical methods for the study of metabolic processes occurring in the body
2. biochemical methods of research in the conditions of norm and pathology
3. new biochemical research methods aimed at protecting human health.

4. The total complexity of the discipline is 6 credits 216 hours.

5. Semester: 2, 3

6. Main sections of the discipline:

1. Chemistry of simple and complex proteins.
2. Enzymes, medical aspects of enzyme science.
3. Vitamins and coenzymes.
4. Basic biosynthesis of nucleic acids and proteins.
5. Lipids, structure, properties, classification. The structure and function of biological membranes.
6. Energy metabolism and the general ways of catabolism.
7. Carbohydrate metabolism.
8. Lipid metabolism.
9. Exchange of amino acids.
10. The exchange of nucleotides.
11. Metabolism of heme and iron metabolism.
12. Hormonal regulation of metabolism and body functions.
13. Biochemistry of blood and immunity.
14. Biochemistry of organs and tissues.
15. Water-mineral exchange. The regulation of water-salt metabolism.
16. Biochemistry of saliva
17. Final lesson

Head of the department



A.E. Gurina