

such as immunity-enhancing, memory-improving, antioxidant, decrepitude-resisting, and tumor-suppressing. FVP and FVP2 showed a low inhibitory effect on bacteria and fungi, while the polysaccharide-iron complex FVP-Fe and FVP2-Fe had no antifungal activity against the yeast, *Rhizopus* and *Aspergillus*. However, FVP-Fe and FVP2-Fe significantly inhibited the growth of *Staphylococcus aureus*, *Escherichia coli*, *Bacillus subtilis* and had a relatively strong antioxidant activity to neutralize the superoxide anionic radical.

The antibacterial activity of basidiomycetes *Pleurotus sajor caju*, *Ganoderma lucidum*, *Coltricia perennis*, *Onnia tomentosa* and *Polyporus mori* is also associated with polysaccharides. For *Coltricia perennis*, *Onnia tomentosa* and *Polyporus mori*, in addition to polysaccharides, antibacterial activity is also characteristic of components such as terpenoids. These components have antibacterial activity against bacteria, but terpenoids are better than polysaccharides. Terpenoids constitute one of the largest groups of naturally occurring compounds in plant, animal, and protista kingdoms, being characterized by their great diversity of chemical structure. Various terpenoids of plant origin have been developed as important medicinal drugs. In contrast, fewer fungal terpenoids have been developed in the medical field.

**Conclusions.** Biologically active compounds of fungi are extremely diverse in chemical nature and biological properties. Among the biologically active compounds of basidiomycetes with antibacterial properties, polysaccharides and terpenoids play the greatest role.

## PROSPECT OF PRODUCTION BIOLOGICALLY OF ACTIVE ADDITIVES OF PROBIOTICS

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**Introduction.** Employment and activity of humanity result in violation of the mode of reception of meal. And it, first of all, result to the diseases and problems with a gastrointestinal tract, lowering of equilibrium of important bacteria of probiotic, that are important as antagonists of pathogenic microorganisms that can get to the stomach and bowels causing the diseases of organism.

**Aim.** To describe the modern pharmaceutical market of probiotics with the aim of establishment of necessity, development and applying in industry new domestic symbiotic dietary additions on the basis of different forms of probiotic microorganisms.

**Materials and methods.** We used the descriptive research method: literary and Internet sources that are freely available were analyzed.

**Results and discussion.** Probiotics are traditionally considered sharply necessary in metropolises and districts that suffered during an accident on Chernobyl nuclear power station..

A global report about development on market of additives of probiotic shows, that the world market of these preparations will stably grow - even with taking into account influence on industry of epidemic of COVID - 19. On prognoses, for period 2019-2025 he will increase on the average on 6%, that will allow to the probiotics and prebiotics firmly to take the place in the general niche of dietary additions and other functional preparations. The sharp jump of demand on such products was observed already in the third and fourth quarter of 2020.

In Ukraine demand is on preparations of probiotic and dietary additions very precedes domestic production. A maximal income from the sale of additions of probiotic comes to the

foreign key players of this market - company BioGaia, CHR Hansen, Bifodan, Renew Life, DuPont and other. Most popularity is used by the probiotics oriented to the increase of immunity. They are produced as different medical forms (capsules, suspensions) and in different concentrations for adults and children.

In Ukraine, unfortunately, production of medical forms of probiotics volumes do not give an opportunity fully to provide a population. Only a few units of enterprises can be considered modern.

**Conclusion.** Preparations of probiotic are very important for the health of gastrointestinal tract and health of organism of man. The production of probiotics for satisfaction of necessities of population requires not only expansion of assortment of facilities but also modernisation of present powers. Only in this way, domestic probiotics can take the important place at the pharmaceutical market of Ukraine.

## PROSPECTS FOR USING OF SPIRULINA IN SPORTS NUTRITION

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**Introduction:** Engaging in any kind of physical activity requires special careful attention to the body. Indeed, in addition to physical activity, we are all susceptible to fatigue at work, household chores - and all this takes away strength and energy. To get the maximum effect from physical activity, but at the same time not harm their health, athletes use special nutritional supplements. They not only maintain the required level of energy, but also have a beneficial effect on muscles, joints and tendons, making them flexible, resilient, nourishing them with useful substances.

**Aim:** To study the possibility of using spirulina in sports nutrition.

**Materials and Methods:** We used a descriptive research method: we analyzed scientific literature data.

**Results and discussion:** Spirulina is a blue-green alga of the genus of cyanobacteria (*Arthrospira*, lat.). Dried spirulina contains about 60% (51–71%) protein. It is a complete protein containing all the essential amino acids, albeit with a reduced content of methionine, cysteine and lysine compared to protein in meat, eggs and milk. However, spirulina outperforms other plant-based sources of protein, such as legumes, in these indicators. Spirulina contains vitamins B1 (thiamine), B2 (riboflavin), B3 (nicotinamide), B6 (pyridoxine), B9 (folic acid), C, D, A and E. It is also a source of potassium, calcium, chromium, copper, iron, magnesium, manganese, phosphorus, selenium, sodium and zinc. Spirulina contains many pigments that may be beneficial and bioavailable, including beta-carotene, zeaxanthin, chlorophyll a, xanthophyll a, echinenone, myxoxanthophyll, canthaxanthin, diatoxanthin, 3'-hydroxyequinenoxan, beta-cryptoxanthin as well as phycobil-proteins - C-phycoyanin and allophycoyanin.

Functional properties of spirulina:

- Mobilizes the vitality of the body, giving additional energy;
- Increases physical endurance;
- Restores strength after training and enhances protein synthesis in muscles;
- Relieves fatigue;
- Normalizes hemoglobin;
- Strengthens ligaments and tendons