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АКТУАЛЬНІ ПИТАННЯ ТЕРЕТИЧНОЇ ТА ПРАКТИЧНОЇ МЕДИЦИНИ

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(1810-1882), but had not been extended to the nervous tissue. However, Golgi believed that his own observations of ramified nerve fibers could support the 'reticular theory', which postulated that the nervous system was a syncytial system, consisting of nervous fibers forming an intricate network, and that the nervous impulse propagated along such diffuse network. In the meantime, the theory that the nervous system as the other tissues was composed of cells, which were christened as 'neurons' by Wilhelm Waldeyer (1836-1921) in 1891, was receiving wide support, also from studies pursued in other laboratories by means of the Golgi's new staining. Cajal was the main supporter of the 'neuron theory', which correctly interpreted the nervous system as composed of anatomically and functionally distinct cells, not in cytoplasmic continuity.

Golgi described the morphological features of glial cells (that are also impregnated by his staining) and of the relationships between glial cell processes and blood vessels. He also described two fundamental types of nerve cells, still named after him as neurons 'Golgi type I', extending their axons at a distance from the cell body (the 'projection neurons' of the modern nomenclature), and 'Golgi type II', with axons ramifying in the vicinity of the cell body (corresponding to the 'local circuit neurons' and 'interneurons' of the modern nomenclature).

Among his other discoveries, in 1878 Golgi described the tendinous sensory corpuscles that bear his name (the Golgi tendon organs). In the years 1886-1892, Golgi provided fundamental contributions to the study of malaria: he elucidated the cycle of the malaria agent, the Plasmodium, in red blood cells, and the temporal coincidence between the recurrent chills and fever with the release of the parasite in the blood. Golgi also studied the efficacy of the administration of quinine during the disease.

In 1897, studying the nervous system with his black reaction, Golgi noticed in neurons an intracellular structure, whose existence he officially reported in April 1898. This structure was designated by Golgi "internal reticular apparatus" and was soon named after him as Golgi apparatus (or much later as the Golgi complex and is frequently referred to nowadays only as "the Golgi"). The discovery of this cell organelle was a real breakthrough in cytology and cell biology. However, the existence of the Golgi apparatus was debated for decades (many scientists believed that it only represented a staining artefact) and was only confirmed in the mid-1950s by the use of the electron microscope. The Golgi apparatus plays a key role in the intracellular sorting, trafficking and targeting of proteins. This organelle makes Golgi the most frequently cited scientist in cell and molecular biology.

Golgi left a heritage of passionate studies that exerted a profound influence on biomedical research in the 20th century.

THE PRODUCTS OF TECHNICAL MICROBIOLOGY - A PROMISING SOURCE OF PROTEIN AND ESSENTIAL AMINO ACIDS

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The rapid economic development of Asian countries at the beginning of the 21st century, specifically within its southeastern region, highlight that the inhabitants of Earth can create a lot of problems related to the increasing need for food within the population in the near future. Increasing the well being of the population of a country is always accompanied by an increasing level of food consumption. The increasing amount of food consumption in populous Asian countries, such as China and India, can quickly lead to shortages. This will be the beginning of a food crisis. An increased demand for protein products then follows. Everyone knows the relationship: the more protein consumption in the diets of people correlates to the development of the economy; through the development and implementation of technology.

Currently, the demand on the traditional sources of food reached its peak in the late 20th century, and further intensification of crop production or legumes can only lead to the degradation of one or another, in the agricultural area.

Humanity needs an alternative to traditional sources of protein. Such a source can be found in technical microbiology. The use of biomass of microorganisms by man would be possible only after the effective modification of the organic producers. The simplest modification technology of organic substances industrially produced biomass of microorganisms can be livestock, poultry, and fish farming. The experience of the former Soviet Union has convincingly proved the promising way in addressing the problem of protein nutrition.

The goal of our work was to analyze the results of research studies on protein and amino acid composition of various biomass producers, growing on different culture media. We analyzed four types of biomasses yeast (yeast grown on diesel oil fractions (DDFN) purified from yeast n-paraffins (DOnP) , yeast obtained in Synthesis methanol (MPA) , yeast derived synthetic ethanol (LTO)) , and three type of biomass of bacteria (bacterial biomass produced by natural gas (BBPG) , bacterial biomass produced on synthetic methanol (BBSM) , bacterial biomass obtained in purified n-paraffins (BBOnP)). The amount of protein in various types of yeast biomass was variable and ranged from 53.6 % (536 g / kg) in DCM , 67.7 % (676 g / kg) DDFN . Also there was a varying concentration of essential amino acids in yeast biomass (from 210.6 g / kg DOnP to 276 g / kg DDFN). The quality of the protein product is usually judged, not only on the amount of essential amino acids in them, but also on the concentration of biomass - lysine. The higher lysine biomasses were DDFN (45.1 g / kg) and DCE (45.0 g / kg). The protein content within bacterial biomass was higher than the yeast biomass - BBSM - 694.0 g / kg, BBOnP - 674.0 g / kg , BBPG - 634.0 g / kg. In bacterial biomass there was a higher concentration of the amount of essential amino acids and lysine compared with yeast products (the amount of essential amino acids in BBSM - 322,2g / kg, BBOnP - 261.5 g / kg, BBPG - 249.7 g / kg concentration of lysine at BBSM - 45.6 g / kg, BBOnP - 38.4 g / kg, BBPG - 36.0 g / kg).

These research results indicate that the products of technical microbiology are a promising source of protein and essential amino acids.

PROSPECTS OF MECHANICAL DISINTEGRATION AS PRETREATMENT METHOD OF NATURAL RAW MATERIAL FOR PRODUCING CAROTENOID PIGMENTS

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In Food Chemistry for coloring food products, synthetic and natural dyes are often used. The experience in the using of synthetic dyes raises a number of issues that affect their usefulness to humans, so the problem of research and development of technological schemes for the production of natural dyes is very important. Several food products stayed physiologically inactive carotenoid - bixin (derived from annatto seeds tropical plant), although for this purpose it can be used effectively in the preparations of carotene concentrates from cheaper raw materials. In particular, many local vegetable objects contain significant amounts of dietary carotenoids. The use of microorganisms for producing carotenoid products is also promising. Choosing raw materials usually takes into account; not only the quantitative content of biologically active substances, but also their availability, ease and efficiency of extraction, and the duration of the process. As a result, many potential sources of carotenoids do not find practical application. It is possible to solve this problem by using the method of mechanical disintegration.

The aim of our study was to investigate the effect of pre-disintegration of raw materials (plant facilities, biomass Blakeslea trispora) on the yield of carotenoids and extraction conditions. We used samples of corn leaves, Jerusalem artichoke, raspberries, grapes and biomass samples Blakeslea trispora. Carotenoid content was determined spectrophotometrically after complete extraction with acetone. Also taken into account was the amount of extractant used. Disintegration was carried out in dispersant original design that ensures the impact force on the object under study. The concentration of total carotenoids in the biomass Blakeslea trispora before the disintegration was 3600,00 ± 12,00