

**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ»**



МАТЕРІАЛИ

**105-ї підсумкової науково-практичної конференції
з міжнародною участю
професорсько-викладацького персоналу
БУКОВИНСЬКОГО ДЕРЖАВНОГО МЕДИЧНОГО УНІВЕРСИТЕТУ
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Матеріали підсумкової 105-ї науково-практичної конференції з міжнародною участю професорсько-викладацького персоналу Буковинського державного медичного університету, присвяченої 80-річчю БДМУ (м. Чернівці, 05, 07, 12 лютого 2024 р.) – Чернівці: Медуніверситет, 2024. – 477 с. іл.

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У збірнику представлені матеріали 105-ї підсумкової науково-практичної конференції з міжнародною участю професорсько-викладацького персоналу Буковинського державного медичного університету, присвяченої 80-річчю БДМУ (м. Чернівці, 05, 07, 12 лютого 2024 р.) із стилістикою та орфографією у авторській редакції. Публікації присвячені актуальним проблемам фундаментальної, теоретичної та клінічної медицини.

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extension of the period of exposure to hypoxia. The tendency to decrease ammonia excretion was manifested already in the first week of the experiment, however, a reliable decrease of this indicator was observed in the second and third weeks of exposure to hypoxia (by a 1.3-fold), and this indicator was minimal in the fourth week (by a 1.7-fold less than the control) ($p < 0.05$). Changes in the excretion of titrated acids were also unidirectional with the excretion of ammonia, and in all likelihood this indicator began to decrease from the second week of exposure to hypoxia (by a 1.4-fold), in the third week, the excretion of titrated acids increased slightly, but remained low compared to the control (by a 1.3-fold) and in the fourth week this indicator was minimal (by a 2.2-fold less compared to intact animals) ($p < 0.05$). Excretion of hydrogen ions gradually decreased with prolonged exposure to hypoxia: already in the first week of the experiment, a tendency to its decrease was observed, but it did not acquire reliable values. In the second week of exposure to hypoxia, the excretion of hydrogen ions decreased by a 1.4-fold, in the third week by a 1.6-fold, and by a 2.2-fold in the fourth week ($p < 0.05$). At the same time, significant changes in the increase in pH (toward alkalosis) were observed only in the fourth week of exposure to hypoxia.

Conclusions. Thus, the acid-regulatory function of the kidneys of rats, which is quite sensitive to any damage to the kidneys, under the influence of chronic hypobaric hypoxia underwent significant changes, which were most clearly manifested in the fourth week of the experiment – a reliable decrease in the excretion of ammonia and titrated acids, hydrogen ions and an increase in pH towards alkalosis.

Muzyka N.Y.

STUDY OF ANTIOXIDANT ACTIVITY OF ALTABOR SUBSTANCE IN VITRO

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Introduction. The fundamental pathogenetic mechanism of cell dysfunction and cell death in various pathological conditions is damage to the outer cell membranes and membranes of subcellular organelles. In many cases, these disorders are based on hyperlipoperoxidation, which is considered to be one of the leading pathogenetic mechanisms of the formation of pathology of the liver Tannins, which are part of the altabor substance, belong to the BAS with known antioxidant properties determined by their chemical structure.

The aim of the study. To study the antioxidant properties of Altabor in various model systems, to determine the effect of Altabor on the process of abnormal lipoperoxidation of intact rat liver microsomes (antioxidant activity of Altabor was evaluated by the effect on the process of enzymatic lipid peroxidation of intact microsomes in the in vitro system), determination of the ID50 index - the concentration of the test substance that inhibits the process of peroxidative degradation of microsomal membranes by 50.0% and comparison of this index with that of altabore as a known phenolic antioxidant.

Material and methods. The model of Fe^{2+} ,ADP-induced NADPH-dependent lipid peroxidation in rat liver microsomes was used. The substance altan with proven antioxidant activity, which is analogous to altabor in origin and content of the predominant active substances - elagotannins, was chosen as a comparison drug in this series of experiments.

Results. During the experiment, it was determined that the concentration of altabor, which inhibits the process of microsomal lipoperoxidation by 50.0% (ID50), was 13.0 $\mu\text{g/ml}$, and the reference sample was 10 $\mu\text{g/ml}$. These data indicate the effect of altabor on Fe^{2+} ,ADP-induced NADPH-dependent ROS of intact microsomes at the level of the reference preparation.

Thus, in the model of Fe^{2+} ,ADP-induced NADPH-dependent LPO in rat liver microsomes, Altabor showed a distinct antioxidant activity, the severity of which is not inferior to altan, a drug based on alder elagotannins with distinct antioxidant properties that are clearly detected in the in vivo experiment at a dose of 1 mg/kg.

The antioxidant potential of Altabor was also evaluated under conditions of reproduction of hyperactivation of lipid peroxidation in yolk lipoproteins (YLP), which are model analogues of serum low-density lipoproteins (LDL) prone to peroxidative modification. Tocopherol (vitamin E)

was chosen as a comparison drug in this series of experiments, which is proposed by the authors of the methodology and is a well-known antioxidant of phenolic structure .

Conclusions. The results of the experiments with the reproduction of abnormal lipoperoxidation in the model system of VLD allowed us to state the presence of a pronounced antioxidant activity of the Altabor substance, which is dose-dependent. In terms of ID50 value, Altabor is slightly inferior to the comparison drug, but has an advantage in the range of active concentrations, which indicates a much greater stability of the effect.

Rovinskyi O.O.

THE ROLE OF RATIONAL NUTRITION IN THE PREVENTION OF CHRONIC DISEASES

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Introduction. The quality of food products, namely proper processing, preparation and storage prevents the development of food diseases and their spread. Food safety and raw materials are referred to as the main factors that determine the health of the population of Ukraine and the preservation of its gene pool. During the years, food safety in Ukraine has deteriorated due to the increase in the supply of the food industry, especially from abroad, reducing the control over the production and sale of food, which causes serious anxiety.

The aim of the study. Nutrition provides the most important function of the human body, supplying it with the energy required to cover the cost of life processes. For normal energy, plastic and catalytic processes of the body, various foods that affect metabolism, cell and organ function are required. Substances that enter the body with food affect physical health, state of mind and emotions.

Material and methods. The main and unresolved problem is the proper rational and healthy eating, which improves metabolism, improves health and saturates the human body with the necessary substances and minerals. In the world market of new technologies and foodstuffs, the tendency to increase the number of qualitatively new products intended to prevent various diseases, strengthen the body's defenses, reduce the risk of toxic compounds and adverse economic factors. However, increasing the absorption of the necessary elements of foodstuffs is relevant for scientists and consumers. The need to absorb and introduce new approaches and new world trends in the food industry of Ukraine to create products that are now called differently (wellness, functional, special). But despite the terms, the essence of such products is one - the protection of the human body from adverse environmental factors, improving health, improving adaptation opportunities, prolonging life expectancy. The nature of the nutrition depends on the metabolism, in the body the structure and function of cells, tissues, organs. And this means that the daily diet should have the main components: proteins, fats and carbohydrates. As you know, the building materials of the body are proteins that form the basis of muscles, skin, hair, nails. They contain 8 indispensable amino acids that are not produced in the body and should be obtained. The most important component of fats is saturated and unsaturated fatty acids, which are subdivided into monounsaturated fatty acids (MNZHK) and polyunsaturated fatty acids (PUFA). Of particular physiological importance are PUFAs, which are indispensable in the body and perform a number of most important functions: composition of cell membranes and other structural elements of tissues, participate in the synthesis of prostaglandins, hormonal substances that regulate many physiological processes, are involved in the breakdown of lipoproteins, cholesterol, prevent aggregation of blood cells and formation of blood clots, remove inflammatory processes, etc.

Currently, the problem of food contamination with toxins with immunosuppressive action and the ability to cause malignancies and increase contamination of fruit and vegetable products of processing enterprises as a result of the use of non -standard raw materials has intensified. The use of fertilizers leads to the accumulation of nitrates and heavy metals in products.

Results. The results of food quality control indicate high levels of contamination of products with toxic chemical compounds, biological agents and microorganisms. In total, in Ukraine from 12