The emergence and increasing prevalence of bacterial strains that cause infectious diseases and that are resistant to available antibiotics demand the discovery of new therapeutic strategies. For many pathogenic bacteria, infections are initiated only after the organism has first adhered to the host cell surface. A modern alternative approach to antimicrobial therapy is targeting bacterial virulence and specifically adhesion as one of virulence factors. This approach forms the basis of anti-adherence strategies, which have been devised to prevent a variety of bacterial infections. The article deals with some modern strategies for anti-adhesion therapy, the mechanisms of inhibition pathogen adherence, immunization using a bacterial adhesion, an adhesin subunit or an immunogenic peptide fragment and a DNA vaccine encoding the adhesin or part thereof and so on. Investigation of bacterial pili which orchestrate the colonization of host tissues is the area most in need of further study. Bacterial pili may be vaccine candidates in important human pathogens as being highly immunogenic structures which are under the selective pressure of host immune responses. C. diphtheriae, the causative agent of diphtheria, is well-investigated in respect to toxin production, while little is known about its factors crucial for colonization of the host. Adherence factors of Corynebacteria may be considered as probable components of developing combined diphtheria vaccines with antibacterial action which localizes a diphtheritic infection in an organism. They’ll become an effective method against a resistant carrier state and be forward to stopping of pathogen circulation among human population.

**Key words:** adhesion, pili, C. diphtheriae, anti-adhesion therapy, antibacterial immunity, diphtheria vaccines

**DESCRIPTION OF TECHNOLOGIES FOR OBTAINING OF ANTIGENS OF CANDIDA GENUS FUNGI**

Rybalkin M.V.

To develop the vaccine against candidal infection the various biotechnological methods for obtaining antigens of Candida genus fungi have been considered in the article. To obtain antigens for the prevention and treatment of candidiasis researchers use different types and parts of fungi of the genus Candida. Methods of preparation of antigens also vary widely including chemical, physical and physico-chemical techniques. Of all possible variants development and research of a dead and subunit vaccine based on C. albicans and C. tropicalis fungi that are the main causative agents of candidiasis have been chosen for further study.

**Key words:** candidiasis, antigen, vaccine, immunity

**GRINEP KAK OBSECHELOVECHESKA PROBLEM. PERSPEKTIVNYE NAPRAVLENII PROFILAKTIKI IN LECHENII**


This article discusses the flu, as one of the most common infectious diseases affecting humanity throughout its history. The data on the structure of A influenza virus and its variability is given historical background for most famous of the pandemics, which inflicted irreparable damage to the population of the Earth, are shown the basic stages of the study for influenza virus. Are considered the types of variability of the A virus influenza, its ability to overcome interspecies barriers that form the basis of pathogen escape from the immune response. The article shows the promising areas of modern prevention and treatment of this disease.

**Key words:** flu A, pandemics, changeability of virus of flu, prophylaxis and treatment of flu.

**ЕКСПЕРИМЕНТАЛЬНИ РОБОТИ (EXPERIMENTAL STUDY)**

**ФАРМАЦІЯ ТА МІКРОБІОЛОГІЯ (PHARMACY & MICROBIOLOGY)**

**ВИЧИЩЕННЯ ПРОТИМІКРОБНОЇ АКТИВНОСТІ 6-СУЛЬФОФЕНОЛОХІДІНІВ 4-МЕТИЛ-1,2-ДИГІДРОКИНІНОЛ-2-ОНОУ**

Цapkо Т.О.

Experimental study of the antimicrobial activity of the nineteen new 6-R-sulfonil derivatives of 4-methyl-1,2-dihydroquinolin-2-one has been carried out using the wells method and the serial dilution method in liquid medium. The experiment has shown that 6-alkyl- sulfonyl-4-methyl-1,2-dihydroquinoline-2-ones have weak activity but 4-methyl-2-0xo-1,2-dihydroquinolin-6-sulfonic acid amides exhibit pronounced antibacterial activity, especially against strains of S. aureus and E. coli. The important structural feature of 4-methyl-2-0xo-1,2-dihydroquinolin-6-sulfonic acid anilides that increases this activity is the presence of the substituent in the ortho-position of the benzene ring of the amide residue.

**Key words:** 1,2-dihydroquinoline-2-one; sulfones; amides, antimicrobial activity, "structure - activity" relationship.

**ANTIMICROBIAL ACTIVITY OF CHOLANIC ACIDS’ STEREOISOMERS COMPARED TO CHOLIC ACID ON THE TEST CULTURES OF MICROORGANISMS**

Barsuk D.O., Stremouhov O.O., Kovalenko S.M.

The paper presents the results of a study of microbiological activity 3α and 3β amino bile acids. We revealed high antimicrobial activity. The availability and range of antimicrobial activity were revealed by the method of serial dilutions in a solid nutrient medium and shown as bacteriostatic as bactericidal effects.
ВИЗНАЧЕННЯ МІКРОБІОЛОГІЧНОЇ ЧИСТОТІ КОНЦЕНТРОВАНИХ РОЗЧИНІВ НЕОРГАНІЧНИХ СОЛЕЙ
АПТЕЧНОГО ВИГОТОВЛЕННЯ
Штритмайтіс О.В., Здорик О.А., Стрілець О.П., Георгіянц В.А.

MICROBIOLOGICAL PURITY DETERMINATION OF CONCENTRATED SOLUTIONS OF INORGANIC SALTS
PHARMACEUTICAL PREPARATION
Shtrimitis O.V., Zdoryk O.A., Strilets O.P., Georgiyants V.A.

Results of microbiological purity research of compounding concentrated solutions during the period of their storage period (1 month) under different temperature conditions are given in the article. The tests were carried out according to requirements of the State Pharmacopoeia of Ukraine by direct two-layer sowing (national part). Experimentally there was found the absence of bacteria Escherichia coli, Staphylococcus aureus, Pseudomonas aeruginosa. It is proved that all the analyzed samples of concentrated solutions meet the requirements regarding the quality of the water medicines for oral administration in accordance with the requirements of the State Pharmacopoeia of Ukraine.

Key words: concentrated solutions of salts of inorganic acids, quality control, microbiological purity.
PROBIOTICS AND DIFFERENT ECONICHES UNDER CULTIVATION CONDITIONS DIFFERENT BY GAS COMPOSITION


Antagonistic activity of Lactobacillus strains, isolated from different biotopes, against pathogenic corynebacteria and Staphylococcus aureus was studied under aerobic and microaerophilic cultivation conditions. It was established that competitive properties of Lactobacillus spp., against C. diphtheriae and S. aureus depended to some degree on the habitat of antagonistic strains. Meanwhile, in aerobic conditions antagonistic properties of Lactobacillus strains isolated from man and bees were expressed more than the probiotic ones. All Lactobacillus strains isolated from man and bees significantly increased their ability to inhibit the corynebacteria and staphylococci growth in microaerophilic cultivation conditions. In this conditions L. plantarum strain isolated from bees was the most powerful antagonist against corynebacteria and Lactobacillus strains isolated from humans were the most active against S. aureus.

Key words: lactobacillus, corynebacteria, staphylococci, antagonistic properties, cultivation conditions.

MACROMIКРОСКОПІЧНІ ЗМІНИ У НІРКАХ ЛАБОРАТОРНИХ ЩУРІВ У НОРМІ, ЗА УМОВ ІМУНОКOMPROMETАЦІЇ ТА ЕНТЕРОКОКОВОЇ ІНФЕКЦІЇ

Торик I. I., Мироненко Л. Г., Перетякто О. Г., Ткачук І. П.

MACROMICROSCOPIC CHANCES OF THE LABORATORY RATS KIDNEY IN NORM AND AFTER IMMUNOCOMPROMETATION WITH ENTEROCOCCUS INFECTION

Toriak I. L., Myronenko I. G., Peretiatko E. G., Tkachyk I. P.

The unification approach to the creation of the enterococcus infection model in the unilinear immunocomprometive laboratory female rats (Wistar) is presented in this article. The examinational material are in the female rats (of the 3-th - months age’s (n=60), the 165-170 g by weight). The purpose of the experiment’s are achieving by the seding enterococcus infection means of the basic structures and blood vessels of the kidney, digestive system damages, that similar with the such in a human in a case of the development of a traditional clinic pathology. The results are evaluated to character of the morphological changes (destructive and degenerative alterations, necrosis, nephropathy, inflammatory (alterative) processes). Sum upping, of capable of the achievement, we are noting carried out experiment’s efficiency and the using optimistic perspective of the extrapolative data in the capacity as a foundation for the further of the newest methods of the enterococcus infection.

Key words: pathomorphological changes, experimental enterococcus infection, laboratory female rats (Wistar), kidney, nephropathy, inflammatory (alterative) processes.

ЗМІНИ ПОКАЗНИКІВ ЦІТОКІНІВ ПІД ВПЛИВОМ ПОЛІМОРФІЗМУ ГЕНІВ IL-2, IL-4 ТА IL-10 У ХВОРИХ НА ТУБЕРКУЛІЗ ЛЕГЕНЬ ПРИ ХІМІОТЕРАПІЇ

Бутов Д.О.

CHANGES CYTOKINES POLYMORPHISMS IN THE GENES IL-2, IL-4 AND IL-10 PATIENTS WITH PULMONARY TUBERCULOSIS WITH CHEMOTHERAPY

Butov D.O.

It examined 150 patients with newly diagnosed pulmonary tuberculosis (NDTL) and 30 relatively healthy donors. Areas studied genes interleukin (IL)-2 polymorphism T-330G, IL-4 – C-589T та IL-10 – G-1082A and the level of cytokines (IL-2, IL-4 and IL-10) in venous blood were measured by ELISA method. The survey for the treatment of patients with NDTL, there was a significant increase in IL-2, and decreased IL-4, IL-10 performance, when compared with relatively healthy donors. After the two-month standard therapy showed a significant reduction in IL-2 and IL-4 content and IL-10 significantly increased. The low level of secretion of IL-4, IL-10 and high IL-2 changes significantly associated with mutant homozygotes C-589T polymorphism of the gene IL-4, G-1082A – IL-10 and T-330G – IL-2 in patients with infiltrative tuberculosis lungs. IL-4, IL-2 and IL-10 are immune markers of treatment outcomes and can help bring out the best strategy for treating patients with NDTL. Immunogenetic factors have a protective effect in patients with NDTL is normal homozygous variant promoter regions of C-589T the gene IL-4, G-1082A – IL-10 and T-330G – G-IL-2.

Key words: tuberculosis, polymorphism of the gene, immunity, cytokines, interleukins.
For humanity rabies is known over a millennium as one of the most dangerous zoonotic disease that is caused by the virus and is manifested by severe lesion of central nervous system with a high risk of death. In this article the authors presented the epidemiological, diagnostic, clinical and morphological aspects of rabies and the case of rabies in human from practice.

Key words: rabies in human, epidemiology, diagnosis, clinical and morphological features.