# 2012 № 3 **3MICT** (Contents)

## Редакційна рада (Editorial Board)

Зміст (Contents)

### Огляди: медицина і біологія (Reviews)

## CLINICAL COURSE AND EFFICACY OF TB TREATMENT DURING THE EPIDEMIC OF TUBERCULOSIS IN THE KHARKIV REGION.

## Lebid L.V., Kireev I.V. Potevko P.I., Lvashenko A.A., V.S.Krutko., Sokol T.V.

The subject of the study was the clinical course of tuberculosis and the treatment effectiveness of patients during the TB epidemic in the Kharkiv region. Hematological toxicity index was defined in 413 patients. The treatment -5 effectiveness was studied in its relation to the clinical form of tuberculosis, the presence of destruction of lung tissue, bacterial excretion, as well as the presence of resistance to TB drugs

Key words: tuberculosis, clinical form, treatment effectiveness, Kharkiv region

## ПРОТИМІКРОБНІ ВЛАСТИВОСТІ НІТРОГЕНОВМІСНИХ КОНДЕНСОВАНИХ СИСТЕМ З ПІРИМІДИНОВИМ ФРАГМЕНТОМ

## Щербак О. М., Андресва І.Д., Казмірчук В. В., Журавель І. О.

THE ANTIBACTERIAL PROPERTIES OF CONDENSED NITROCONTAINING COMPOUNDS WITH THE PYRIMIDIN FRAGMENT (REVIEW)

Scherbak O. M., Andreieva I. D., Kazmirchuk V. V., Zhuravel I. O.

The review summarizes the data of domestic and foreign sources concerning antibacterial properties of condensed heterocyclic compounds of different groups. The prospect of direct synthesis of condensed heterocyclic compounds and the study of their antimicrobial activities in order to develop new antibacterial agents on their basis is founded.

Key words: infectious diseases, condensed nitrocontaining compounds, antibacterial activity

## РОЗПОВСЮДЖЕННЯ ОСНОВНИХ ГЕНІВ ВІРУЛЕНТНОСТІ СЕРЕД ПРЕДСТАВНИКІВ РОДУ VIBRIO

## Петренко О.В.

THE SPREAD OF THE VIRULENCE KEY GENES AMONG THE REPRESENTATIVES OF THE GENUS VIBRIO

Petrenko O. V.

Bacterial DNA floatings, which relate to separate genes recombination as well as genomic blocks gaining resulted 19 from horizontal transgenesis, underlie phenotypic and genotypic properties transformations of vibriosis causative agents. The environmental spread of the vibrios with different pathogenic potential assists to form vibriosis new causative agents with various combination of the genes of pathogenicity.

Key words: vibrios, genes of pathogenicity, virulence.

## ПНЕВМОЦИСТНАЯ ПНЕВМОНИЯ: ИСТОРИЧЕСКИЕ, ЭПИДЕМИОЛОГИЧЕСКИЕ И КЛИНИКО-МОРФОЛОГИЧЕСКИЕ АСПЕКТЫ

Марковский В. Д., Плитень О. Н., Мирошниченко М. С., Мирошниченко А. А. PNEUMOCYSTIS PNEUMONIA: HISTORICAL, EPIDEMIOLOGICAL, CLINICAL AND

MORPHOLOGICAL ASPECTS

Markovskiy V. D., Pliten O. N., Myroshnychenko M. S., Myroshnychenko A. A.

Pneumocystis pneumonia is a life-threatening form of pneumonia, which occurs in people with insufficiency of immune system. In the article is devoted the data of the literature about historical, epidemiological, diagnostic, 26 clinical and morphological aspects of pneumocystis pneumonia. The authors give two own observations from the practice of pneumocystis pneumonia that was diagnosed in young women using autopsy material. This article will allow the doctors of practical health care to pay special attention to the timely prevention, diagnostics and treatment of this pathology.

Key words: pneumocystis pneumonia, diagnostics, clinical and morphological features.

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### Експериментальні роботи: медицина та біологія (Experimental articles)

## MODELS OF AMPHOTERICIN MEMBRANE CHANNEL BASED ON CONCERTED **INTERMOLECULAR = C-H...O INTERACTIONS**

## Lisnyak Yu. V.

To study the possibility for amphotericin to form membrane channel via intermolecular interactions mimicing the association mode of polyene macrolides in crystal structures we have built two channel models in vacuo: amphotericin B octamer and hexamer. The octamer model does not reproduce the concerted weak =C-H...O intermolecular interactions within the whole aggregate structure and has too large pore diameter. For hexamer model, the pore diameter is within experimental estimates. The hexamer model rather well reproduces characteristic features of a channel with such concerted weak interactions: association mode, H-bonding pattern within the whole assembly and accessibility of polyene hydroxyl groups for hydrophyllic interactions in the pore. Key words: amphotericin, molecular modeling, interaction, membrane channel

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## THE ROLE OF REPRESENTATIVES IN OPHTHALMIC PATHOLOGY HERPESVIRUS

Smelyanskaya MV, Peremot SD, Martynov AV, Volyansky AY, Kashpur NV, Voloshko IV, Moroz MP The goal was to establish a place of herpesviruses (HSV1, HSV2, HHV6, SMV, VZV, EBV) in the etiological structure of the eye's diseases. The study involved 35 patients diagnosed with recurrent keratitis (15 patients) and viral uveitis (n = 20). Was carried out virological examination, including a study using fluorescent antibody scrapings from the cornea and conjunctiva for the presence of herpesvirus antigen in leukocytes and determination of the blood antigens of viruses with the calculation of the fluorescence index (FI). Set of different herpesvirus persistence in leukocytes of blood in 95% of patients with viral uveitis and 32% of patients with keratitis. In the each second patient with viral uveitis (10) detected association of three or more herpesvirus antigens in blood leukocytes. Most often these associations are found antigens of viruses EBV, SMV, and HHV6. Key words: herpes, eve's diseases, immunofluorescence, etiological structure.

## СТРУКТУРНЫЕ ДОМИНАНТЫ НЕВРИТА ТРОЙНИЧНОГО НЕРВА В ЭТИОПАТОГЕНЕТИЧЕСКОЙ КАРТИНЕ ПРОЛОНГИРОВАННЫХ ИНФЕКЦИОННО-ВОСПАЛИТЕЛЬНЫХ ПРОЗОПАЛГИЙ

Торяник И.И.

STRUCTURAL DOMINANTS OF THE TRIGEMINAL NERVE'S NEURITIS IN ETYOPATHOGENETIC PICTURE'S PROLONGATIVE INFECTIOUS AND INFLAMMATORY PROSOPALGIA Torianik I.I.

The morphological analysis's results of the trigeminal nerve's fragments and its node after the experimental infectious and inflammatory neuritis influence are presented in this work. The examinational model's are Chinchilla rabbit's male of the 2.5-3.0 kg by weight, which was puted agent on perineural cavity. In experimental results was adjusted, that the acute form's of the trigeminal nerve's neuritis was obtain. The oedema, inflammatory infiltration, which was includes lympho-monocytical component's plasmosytes were became the morphological evidence. The present signs of the gigantocellula metamorphosis, hyperchromatosis, basophil granular, typical nuclear changes (caryorexis, caryopiknosis) was been determined of the specific damages.

Key words: structural dominants, trigeminal nerve, etyopathogenetic picture, prolongative infectious and inflammatory prosopalgia.

## АНАЛІЗ БІОХІМІЧНОГО СКЛАДУ ФІТОІМУНОКОРЕКТОРУ «АФЛУФІТ» МЕТОДОМ ВИСОКОЕФЕКТИВНОЇ РІДИННОЇ ХРОМАТОГРАФІЇ

Немятих О.Д. ANALYSIS OF BIOCHEMICAL COMPOSITION OF FITOIMMUNOKORREKTOR "AFLUFIT" BY METHOD OF HIGH-EFFICIENCY LIQUID CHROMATOGRAPHY

## Nemyatykh O.D.

The research on development of methodologies of qualitative and quantitative determination of active and auxiliary substances in composition of preparation "Aflufit" in form child's syrup and jelly by method of highefficiency liquid chromatography have been conducted. Identification and quantitative maintenance of active (chlorogenic, 1,3-dicofeilchinic, derivatives of coffee acid) and auxiliary (sorbic, maleinic, lemon, apple acids, saccharose, maltose, glucose, fructose, arabinose) substances have been certained. Worked out methodologies is simple, highly selective and can be used for control of quality of medicine. Key words: high performance liquid chromatography, analysis, "Aflufit"

## МОЛЕКУЛЯРНЕ МОДЕЛЮВАННЯ ВЗАЄМОДІЙ ПРОТИМІКРОБНИХ СПОЛУК З ЕЛЕМЕНТАМИ КЛІТИННОЇ МЕМБРАНИ: НІСТАТИН-ЕРГОСТЕРИНОВА МЕМБРАННА

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## ПОРА

## Лісняк Ю. В., Мартинов А. В.

## MOLECULAR MODELING OF INTERACTIONS OF ANTIMICROBIAL COMPOUNDS WITH CELL MEMBRANE COMPONENTS: NYSTATIN-ERGOSTEROL MEMBRANE PORE

Lisnyak Yu.V., Martynov A.V.

Model of nystatin-ergosterol membrane channel has been built by molecular modeling methods. Peculiarities of molecular structure and intermolecular interactions of this supramolecular aggregate have been analyzed. Parameters of our model have been compared with experimental data. The presented model of nystatin-ergosterol membrane channel can be incorporated into phospholipid bilayer membrane to serve as a starting structure in further comprehensive molecular dynamics simulations of these systems in lipid and aqueous environment. Key words: nystatin-ergosterol membrane channel, molecular modeling, supramolecular aggregate

## ВИКОРИСТАННЯ НОМОГРАФІЧНОГО МЕТОДУ В ЕТІОЛОГІЧНІЙ РОЗШИФРОВЦІ АЛЕРГІЧНОГО РИНІТУ У ДІТЕЙ

# Шмуліч В.К., Прохоренко О.А., Шмуліч О.В., Старусева В.В., Цимбал В.Н., Ащеулов О.М., Тесленко Т.О.

FEATURES OF ETIOLOGIC SPECTRUM OF ALERGIC RINITY FOR CHILDREN DEPENDING ON SEX AND AGE

Shmulich V.K., Prokhorenko A.A., Shmulich O.V., Staruseva V.V., Zimbal V.N., Asheulov .OM., Teslenko T. In this work there are presented the results of allergy testings of children suffering from alergic rinity. The aim of 57 this study was the specification of casually significant allergen depending on sex and age. Results of testing are processed by a method of the mathematiical analysis, raised in nomograms according to which, considering the nosological entity of disease, sex and age of a patient, it is possible to define causally significant allergen. Key words: nomographic method, children, etiology, alergic rinity, scarification.

## ДОСЛІДЖЕННЯ ТЕХНОЛОГІЧНИХ ТА МІКРОБІОЛОГІЧНИХ ВЛАСТИВОСТЕЙ КРІОПОДРІБНЕНОЇ РОСЛИННОЇ СИРОВИНИ

Конюхов І.В. Чуєшов В.І., Солдатов Д.П.

RESEARCH OF TECHNOLOGICAL AND MICROBIOLOGICAL PROPERTIES OF THE CRYOMILLED MEDICINAL PLANT RAW MATIRIAL

Koniukhov I.V., Chueshov V.I., Soldatov D.P.

The technological parameters of the cryomilled plant raw matirial Calendula flowers, Taraxacum roots, Silybum fruit, Mentha leaves, Menyanthes grass, Agrimonia grass, Fumaria grass have been determined. Microbiological cleanness and antimicrobial activity of cryopowders and input material have been researched. It is established that 62 use of cryomilling lead to microbiological contamination decrease, cryopowders of researched medicinal plant raw material can be used in tablets technology.

Key words: vegetable raw materials, tablets, cryogenic grinding, cryo powder cryo mill, operating characteristics, microbiological properties, antimicrobial activity, hepatic.

## ІМУНОБІОЛОГІЧНА ХАРАКТЕРИСТИКА ОКРЕМИХ ФРАКЦІЙ ПРАВЦЕВОГО АНАТОКСИНУ ДО ТА ПІСЛЯ ВПЛИВУ УЛЬТРАЗВУКОВИХ ХВИЛЬ

Бабич Є.М., Калініченко С.В., Рябовіл О.В., Ківва Ф.В., Рижкова Т.А., Скляр Н.І., Коваленко О.І., Плугатор Т.М., Егліт В.О., Білозерський В.І.

IMMUNOBIOLOGICAL CHARACTERISTIC OF TETANUS TOXOID FRACTIONS BEFORE AND AFTER EXPOSURE TO ULTRASONIC WAVES

Babych Ye.M., Kalinichenko S.V., Ryabovol E.V., Kivva F.V., Ryzhkova T.A., Sklyar N.I., Kovalenko O.I., L.A., Plugator T.N., Eglit V.A., Bilozerskii V.I.

Fractional composition of industrial tetanus toxoid before and after exposure to ultrasonic waves was determined with the use of gel filtration chromatography. It was established, that with the exception of specific antigenic structures (fraction A), tetanus toxoid contained ballast proteins (fraction B). Ultrasound treatment of tetanus toxoid resulted in ballast proteins quantity decrease. Percentage composition of tetanus toxoid fractions depended on ultrasound treatment conditions.

Key words: tetanus toxoid, chromatography, ultrasound.

## ІНДУКЦІЯ Т- ТА В-КЛІТИННОЇ ІМУНОЛОГІЧНОЇ ПАМ'ЯТІ ЗА ВАКЦИНАЦІЇ РІЗНИМИ ТИПАМИ ВАКЦИН Волянський А.Ю.

70 THE INDUCTION OF T-AND B-CELLS OF IMMUNE MEMORY DURING THE VACCINATION WITH DIFFERENT TYPES OF VACCINES Volyansky A. Yu.

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The dynamics of the generation of T-and B-cell of immunological memory under the influence of vaccination with different types of vaccines have been investigated. It was found that the creation of resistant strained immunity (The adsorbed diphtheria-tetanus toxin with a reduced amount of antigens, measles vaccine) is associated with a twofold increase during the first months after inoculation of the amount of TCM (CCR7 + CD45RA-) - and BM (CD22 + CD72 +) - memory cells in the peripheral blood. The induction of only memory T-cells (TCM), which is not accompanied by the formation of memory B cells, does not lead to the prolonged preservation of immunity.

Key words: vaccination, T-cells and B-cells of immune memory, long-term immunity.