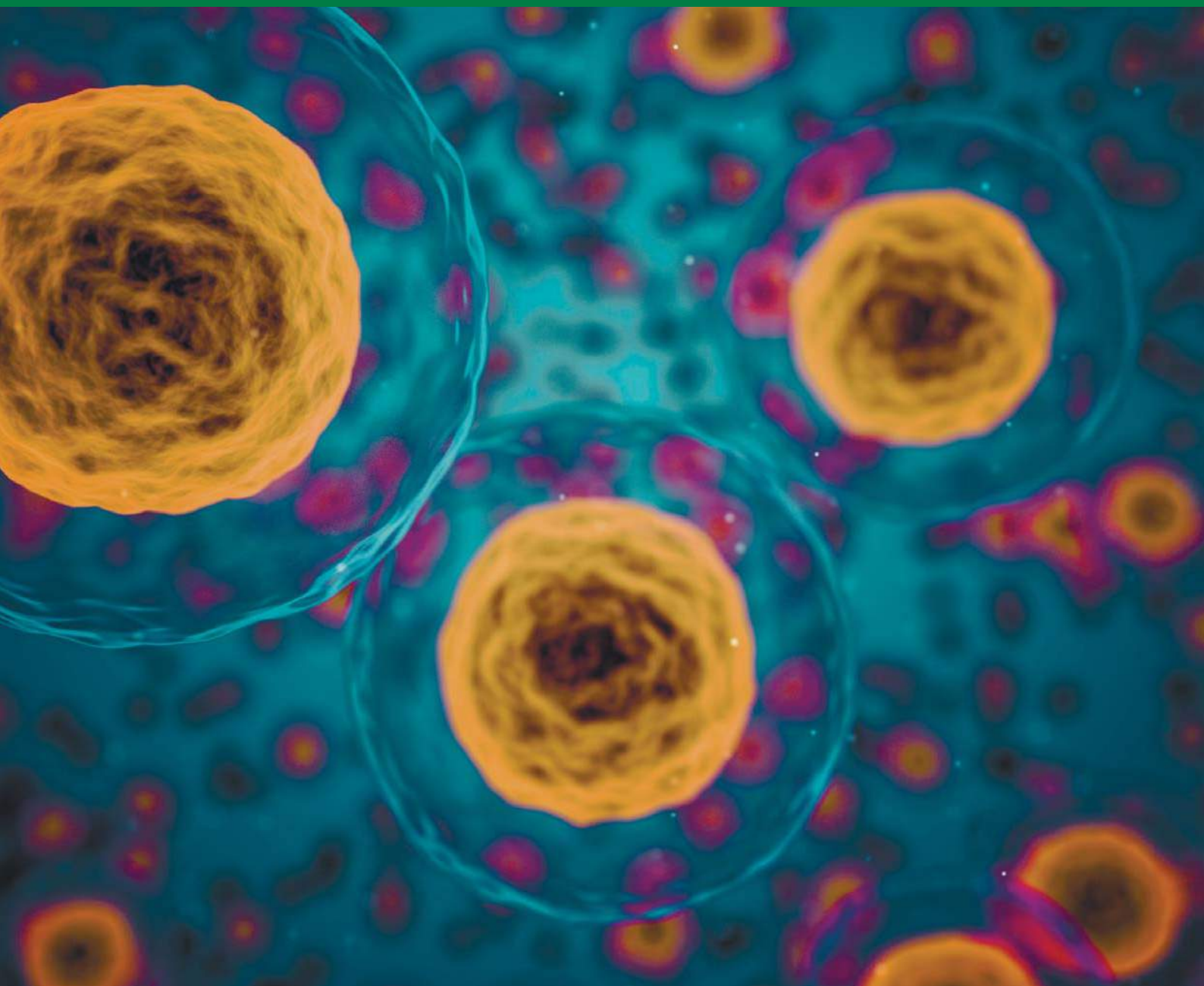
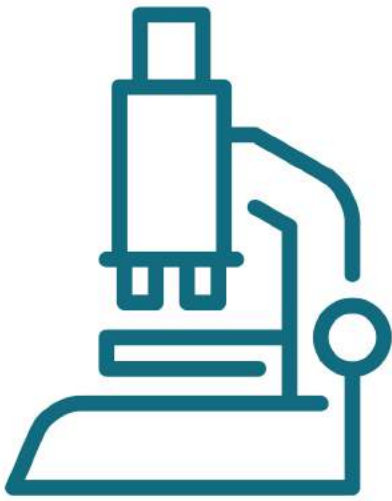


Kharkiv National Medical University

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**KHARKIV NATIONAL
MEDICAL UNIVERSITY**



BIOMEDICAL SCIENCES





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THE IMPACT OF SPECIFIC PROFILAXIS OF INFLUENZA VIRUS ON THE SEVERITY OF COVID-19

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Introduction. According to the research data, a high frequency of influenza virus (IV) and COVID-19 combination is confirmed. Respiratory viruses are found to induce the attachment of *S. pneumonia*, *P. aeruginosa*, *H. influenza*, *K. pneumoniae*, *L. pneumophila*. IV infection causes the changes in TLR4 and TLR5 signal path, which violates the attraction of neutrophils, creating conditions for secondary bacterial infections.

The studies have shown that IV vaccines induce humoral immunity and carry activating impact on cell immunity effects (CIE), increasing the number of NK (CD3-/CD16/CD56+), NTK-cells (CD3+/CD16/CD56+), B-lymphocytes (CD45+, CD20+), activated (CD3+/HLA-DR+) and cytotoxic (CTL, CD8+/HLA-DR+) T-lymphocytes, as well as cells with early activation markers (CD45 + / CD25 +), activate dendritic cells (DC), the expression of inducible T-cell co-stimulator ligand molecule is increased (CD275), which plays a vital role in the induction of T-helpers. Thus, the activation of CIE in inoculated with adjuvant vaccine (AV) accelerates the formation of an immune response, which can contribute to reducing the morbidity of not only IV, but also COVID-19 because of the similarity of their structures.

The aim of the research. Investigate the world literature on the impact of specific prophylaxis of influenza virus on the severity of SARS-CoV-2.

Results. When infecting of the respiratory system cells, pathogenic virus structures are recognized by various intracellular receptors, Toll-like receptors (TLR), RIG-I-like receptors, activation of which initiates a rapid immune response against viral invasion. Activation of TLR3, TLR7 and TLR8 by molecular structures of the virus induces interferons production (IFN), in particular IFN of the I and III types.

According to M. Wadman et al.(2020), COVID-19 promotes the neutralization of the interferon system function, thus, their stimulation through TLR activation can provide an antagonistic effect on SARS-CoV-2.



AV also increased the expression of MDA5 cytoplasmic helicase, which recognizes viruses, including SARS-CoV-2, providing virus recognition at an early stage of infection and activation of a specific immune response. Based on the foregoing, the use of AV against IV in the future vaccination season can facilitate the course of not only IV, but also COVID-19.

M. Arokiaraj (2020), studying statistical indicators represented by 34 countries confirmed presence of a reverse correlation between IV vaccination coverage and such indicators as COVID-19 incidence, severity of the disease course and frequency of lethal cases.

P. Debisarun et al. (2020) studied COVID-19 incidence among 10,632 medical workers, studying the vaccinations anamnesis. The carried out analysis showed that vaccinated against IV reliably rarely suffered COVID-19. In the experimental part of the work, which consisted in determining the peculiarities of cytokine production with leukocytes after their treatment with a influenza vaccine (IV), followed by stimulation with SARS-CoV-2 virus, a significant increase in the production of γ interferon was determined after the influence of SARS-COV-2 virus. The obtained data allowed P. Debisarun et al. to express the assumption that positive impact of IV on COVID-19 may be due to the fact that vaccination against IV trains immunity. Thereby the re-programming of congenital immunity cells followed by a more effective immune response (IR) on any repeated infectious triggers takes place. In this case, the character of IR determines a low risk of "cytokine storm" launching due to γ -interferon, which suppresses the ways of interleukin-12 and 18 activation.

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PECULIARITIES OF COVID-19 DISTRIBUTION AND TRANSMISSION

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Introduction. The first patients with coronavirus appeared at the end of 2019. This disease spread rapidly and was assigned the status of a pandemic on March 11, 2020.



CONTENTS

BIOMEDICAL SCIENCES	2
Abdalqader Abujouda.....	3
STUDY OF THE RANGE OF ANTIDIABETIC MEDICINES FROM THE GROUP OF SULPHONYL UREA DERIVATIVES PRESENTED ON THE PHARMACEUTICAL MARKET OF UKRAINE	3
Bezrodnaya Anastasiya, Gulati Lakshay	4
STUDY OF CORRECTION OF BEHAVIORAL REACTIONS DRUG BASED ON QUERCETIN IN CONDITIONS INFLUENCE OF XENOBIOTICS IN SUBACUTE EXPERIMENT	4
Bilobrov Danil.....	6
STUDY OF THE RANGE OF THYROTROPIC DRUGS, REPRESENTED ON THE PHARMACEUTICAL MARKET OF UKRAINE	6
Bulynina Oksana, Bulynin Vladislav	7
THE IMPORTANCE OF THE LEADERSHIP FOR THE PHYSICIANS	7
Burlakov Nazar.....	9
THE SUN AS A TRIGGER FACTOR IN OCCURRENCE OF PHOTODERMATOSIS	9
Fatima Faiza, Bezrodnaya Anastasiya.....	11
STUDY OF THE BEHAVIOR OF RATS IN THE "OPEN FIELD" UNDER THE INFLUENCE OF POLYPROPYLENEGLYCOL IN A SUBACUTE TOXICOLOGICAL EXPERIMENT AND AFTER CORRECTION WITH BIOFLAVONOID	11
Gaichuk Alesya, Darshan Divesh, Saveliev V.V.	13
EXPERIMENTAL STUDY OF THE INFLUENCE OF CELECOXIB, CAFFEINE AND THEIR PHARMACEUTICAL COMPOSITION ON THE LEVEL OF CERULOPLASMIN IN THE RATS' BLOOD SERUM UNDER THE CONDITIONS OF FORMALINE EDEMA	13
Hopta Olena, Pochapskyi Vladyslav, Beskorovaina Tetiana	16
THE IMPACT OF SPECIFIC PROFILAXIS OF INFLUENZA VIRUS ON THE SEVERITY OF COVID-19	16
Krykunova Anna	17
PECULIARITIES OF COVID-19 DISTRIBUTION AND TRANSMISSION.....	17
Kutsiianova Viktoriia	19
THE LEVEL OF PUBLIC AWARENESS OF PARASITIC DISEASES.....	19
Makarova Valeriia, Chetsy Owusu.....	20
HISTORY OF PACKAGING DRUGS.....	20
Marchenko Iryna	22
ANALYSIS OF THE RESULTS OF THE MICROBIOLOGICAL INVESTIGATION OF EXUDATE, BLOOD AND SAMPLES OF AFFECTED TISSUES OF PATIENTS WITH MULTIPLE ABSCESSSES OF THE ABDOMINAL CAVITY DUE TO PERFORATION OF THE INTESTINE	22
Marovtiii Yana	23
MODERN METHODS OF LABORATORY DIAGNOSIS OF HYPERHOMOCYSTEINEMIA	23
Morozova Oksana, Nerubatskyi Volodymyr.....	25
The Hot Pressing of the Zirconium Oxide Ceramic for Bioengineering Purpose	25
Nguyen Do To Uyen, Victoria Erokhina.....	26
MEDICAL STUDENTS' PERSPECTIVES ABOUT DISTANCE LEARNING DURING CURRENT COVID-19 PANDEMIC	26
Ryasnyanski Timur Andreevich.....	28
DEFRAGMENTED STRUCTURE OF THE MESENTERY AND THE POSSIBILITY OF DIAGNOSTIC AND TREATMENT INTEGRATION INTO ONCOTIC SURGERY	28
Sofia Chirashnaya.....	29
COVID-19 AND OTHER VIRAL DISEASES	29
Zaur Badalov	30
CONTENT OF SIRTUIN-3 IN THE CEREBRAL CORTEX OF RATS WITH EXPERIMENTAL ALZHEIMER'S DISEASE.....	30
Zoabi Kosai	32
CLINICAL SIGNIFICANCE OF CARDIORESPIRATORY COUPLING INVESTIGATION	32
Zorenko Yevgeniya, Singh Rhea.....	34
STAINING WITH BROMOPHENOL BLUE AS METHOD FOR STUDYING THE NEUROFIL PROTEIN OF CEREBRAL HEMISPHERES IN RATS WITH EXPERIMENTAL ALZHEIMER'S TYPE DEMENTIA	34

