

**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
присвяченої 80-річчю БДМУ
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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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Conclusions. A clear dependence of surface water pollution of the river network of the studied watercourses on the level of anthropogenic load was established. A close direct correlation between the level of organic pollution and the microbiological state of the Siret and Dniester river basins was revealed. The seasonal dependence of the studied indicators is monitored. Despite the fact that microbiological indicators of fecal pollution are one of the most important parameters for determining water quality, the use of these indicators for monitoring the state of surface water in river basins of Ukraine has not yet been properly applied.

Prodanchuk G.M.

GOOD LABORATORY PRACTICE (GLP) IN MODERN UKRAINIAN LEGISLATION. LITERATURE REVIEW

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Introduction. Good Laboratory Practice (GLP) is a widely recognized international standard in the quality system, aimed at ensuring uniformity, consistency, reliability, reproducibility, quality and integrity in preclinical research. In recent years, Ukrainian legislation has been rapidly harmonizing with the legislation of the European Union.

The aim of the study. To conduct a literature review on GLP in contemporary Ukrainian legislation, comparing and highlighting differences between OECD GLP and ISO/IEC 17025.

Materials and methods. Bibliosemantic and informoanalytical methods were employed in the research.

Results. The relevance of this research increased notably after the signing of the Association Agreement with the EU in 2014. A prime example of this lies in the fact that currently Ukrainian legislation includes several documents regulating the use of GLP requirements in laboratory research, such as:

- the Order of the Ministry of Health of Ukraine No. 944 of December 14, 2009
- the Guideline 'Medicines. Good Laboratory Practice. ST-N MOH: 2008'
- the Order of the Ministry of Health of Ukraine No. 690 of September 23, 2009 "About approval of the Procedure for carrying out clinical testing of medicines and examinations of materials of clinical testing and Standard regulations on the commissions on questions of ethics".

A significant legislative document in the field of public health was recently adopted in June 2022 – the Law of Ukraine "On the Public Health System." It can be noted that this law is harmonized with EU legislation regarding quality system requirements for testing laboratories according to ISO/IEC 17025 (DSTU ISO/IEC 17025) and Good Laboratory Practice (OECD GLP), meeting the same standards as the EU.

This is confirmed by the following provisions of the Law:

- Within the main expert institution in the field of public health, reference laboratories are established and operate. The main expert institution in the field of public health may determine other reference laboratories and reference centres to perform assigned functions.
- A network of reference laboratories operates in the public health system to ensure the quality management of laboratory research necessary for the operational functions of public health.
- Reference laboratory in the public health system is an accredited laboratory that performs functions and meets criteria established by the central executive body responsible for shaping state health policy.
- Accredited laboratory, regardless of ownership and location, located in Ukraine or any other country, complies with ISO/IEC 17025 (DSTU ISO/IEC 17025) and/or ISO/IEC 15189 (DSTU ISO/IEC 15189) standards, as well as Good Laboratory Practice (GLP OECD) or the National Accreditation Body of Ukraine, a foreign accreditation body that is a full member of the International Laboratory Accreditation Cooperation (ILAC), or another foreign accreditation body whose activities meet the requirements of the ISO/IEC 17011

standard (DSTU ISO/IEC 17011).

Conclusions. Thus, it can be concluded that compliance with OECD GLP requirements is a mandatory condition for obtaining appropriate accreditation for a laboratory in the field of healthcare. Considering all this, an effective comparison between the Principles of Good Laboratory Practice of the Organisation for Economic Cooperation and Development (OECD GLP) and ISO/IEC 17025 is relevant, taking into account the historical background and goals of both documents.

Sydorchuk I.Y.

BACTERIA OF THE GENUS LACTOBACILLUS IN THE QUORUM SENSING REGULATION SYSTEM OF THE COLON MICROBIOME OF CHILDREN DURING THE FIRST 3 MONTHS OF LIFE

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Introduction. The physiological significance of bacteria of the genus *Lactobacillus* for the human body and its exceptional importance in the functioning of the macroorganism-microbiome ecosystem have been proven by numerous studies and are beyond doubt.

At the same time, the state of the colonic microbiome in children aged newborn to infancy (8 to 90 days) has concise information only in North America. In Bukovina, the issue remains unaddressed by researchers.

The aim of the study was to determine the role of *Lactobacillus* bacteria in the formation of the colonic microbiome and their role in nonspecific anti-infective protection of children in the first critical period of immune system development.

Materials and methods. The microbiological conventional method was used to isolate and identify 27 strains of different taxons of *Lactobacillus* - *L. acidophilus* (86 - 68.25%), *L. casei* (15-11.90%), *L. plantarum* (10-7.94%), *L. helveticus* (10-7.94%), *L. gasseri* (3-2.38%) and *L. fermentum* (2-1.59%), which made it possible to classify the colon microbiome of these children as Firmicutes type. Clinical material was taken from 126 children with age less than 3 months.

Results. The isolated and identified bacteria of the genus *Lactobacillus* have a narrow spectrum of antagonistic action against primary pathogenic (*S. flexneri*, *S. sonnei*, *S. typhi*, *S. typhimurium*), opportunistic (*S. aureus*, *MRSA*, *C. freundii*, *E. aerogenes*, *K. pneumoniae*, *Proteus* and others) bacteria and yeast-like fungi of the genus *Candida*. The highest level of antagonistic activity ($92.35\% \pm 3.37\%$) was observed in *L. acidophilus*, other taxons - $77.43 \pm 2.87\%$ - $89.93 \pm 2.97\%$.

The inhibitory effect of *Lactobacillus* against clinical strains of *Staphylococcus* was found to be from $63.27 \pm 4.17\%$ to $68.43 \pm 3.74\%$, *S. typhi* - from $61.67 \pm 3.29\%$ to $81.32 \pm 4.91\%$, depending on the *Lactobacillus* taxon.

Conclusions. Isolated and infected bacteria of the genus *Lactobacillus* from the feces of children during the birth period produce factors of nonspecific anti-infective protection: cultivation of these bacteria in sterile milk for 18 hours leads to an increase in lysozyme by 88.02%, lipase activity by 89.04% and amylase by 2.04 times. A universal adaptive mechanism that has evolved during the evolution of the autochthonous microbiota, which expands the capabilities of microorganisms to master new environmental niches is adhesion to target cells (enterocytes) with the help of specific adhesin proteins. The isolated bacteria of the genus *Lactobacillus* belong to the medium-adhesive and highly co-adhesive.

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TAXONOMIC COMPOSITION OF THE VULVOVAGINAL MICROBIOME OF PREGNANT WOMEN THROUGHOUT PREGNANCY

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