faecalis, S. pyogenes), *Enterobacteriaceae* (*E. coli, K. pneumoniae, P. rettgeri*), gram-negative not fermenting bacteria (*P. aeruginosa, A. calcoaceticus, A. lwoffii*), microscopic fungi (*C. albicans, A. niger*). Etiologically significant microflora was isolated from almost every second sample material which has been examined by bacteriological method. The causative agents were being isolated of the outer ear canal slightly more often.

In most cases, when one sample was being investigated, only one etiologically significant strain was isolated. In the discharge study of from the outer ear canal two pathogens were isolated simultaneously in one case (12,5 % of all cases, when etiologically significant microorganisms isolated). During investigation of tonsils mucosa samples two pathogens were isolated simultaneously in 44 cases, and three pathogens in two cases (14,5 % of all cases, when pathogens were isolated). Of the nasal mucosa samples two pathogens simultaneously were allocated in two cases (8,7 %). The isolated etiologically significant microorganisms spectrum depends on the localization of the pathological process. Thus, lion share of the strains, isolated from tonsils, belongs to *S. aureus* species (55,8 %), the share of other gram-positive cocci compiles 1,9 %. *Enterobacteriaceae spp.* were revealed in 21,2 %, microscopic fungi - in 18,5 %, and gram-negative not fermenting bacteria were less often isolated – 2,7 % of all cases. The percentage of the *Staphylococcus spp.*, isolated of nasal mucos, made up 76 %, including 72,0 % of strains identified as *S. aureus*. *Enterobacteriacea spp.* were identified in 20,0 %. In one case strain of *A. niger* was isolated, which compiles 4 % of the total number of isolated pathogens. Unlike the above mentioned micro ecological niches in secretions from the outer ear canal strains of *S. aureus* were found much less – 33,3 % of the total number of identified pathogens. The strains of microscopic fungi accounted for 44,4 % and gram-negative not fermenting bacteria (*P. aeruginosa*) 22,2 % of all pathogens.

The obtained data indicate that the inflammatory diseases etiology of the ENT-organs depends on microecological conditions specific to each localization. It is obviously, the identified patterns should be considered in the treatment and prophylaxis of inflammatory diseases of ENT organs.

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SANITARY-HYGIENIC ASSESSMENT OF DRINKING WATER FROM THE WELL BY MICROBIOLOGICAL INDICATORS IN UKRAINE AND EUROPE

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The drinking water quality is the basis of epidemiological safety and public health. Benign water is an indicator of high health welfare and living standards. State health authorities of developed countries are paying special attention to the drinking water quality. The goal of regulating documents is protection of human health from the adverse effects of any water contamination intended for human consumption.

In Ukraine, the drinking water safety standards are fixed in the State sanitary norms and regulations "Hygienic requirements for drinking water intended for human consumption" (State Standards 2.2.4-171-10). Current national standards for drinking water are close to European ones. In Europe, regional standards are developed based on the Directive on the quality of water intended for human consumption 98/83/EC proposed by the Council of the European Union (EU) November 3, 1998, the requirements of which are binding for the EU members.

Drinking water from wells (private water supply) require special monitoring because of the each source peculiarities and the microbial contamination risk probability. Hardware requirements for such sources identified State Standards 2.2.4-171-10 in Ukraine and regional standards of developed Europe countries on the basis of Directive 98/83/EC (e.g. UK Private Water Supplies Regulations 1991). The local authority is responsible for monitoring private water supply in Ukraine and in EU. The essential difference is in the number of water sources in the country. In Ukraine has a sufficient level of public water services supply and sanitation in urban areas (where 90 % of the population use centralized water supply and sanitation). Meanwhile, 345 urban-type settlements, 95 % of villages are not equipped with centralized water supply and sanitation. In European countries, the vast majority of the population uses water from the water- supply network, and only a small portion (e.g. UK near 1 %) use private sources of supply.

The drinking water safety monitoring from wells requires consideration of the seasonal and weather conditions which should be into account wile the frequency of laboratory tests determining. State Standards 2.2.4-171-10 in Annexes № 11-12 the requirements for mine pit sanitation and the water disinfection in wells using dispensing cartridges were defined.

Microbiological indicators to determine sanitary assessment of drinking water vary depending on the category of water. According to Directive 98/83/EC the private water supplies are tested routinely by two indicators – coli-forms and *E. coli* / *E. coli* in 100 ml sample and colony counts. The requirement of calculating the total microbial number is determined for certain groups of private water sources (with water volume of more than 1,000 cubic meters to 5m cubic meters / per day, serving from 5000 to at least 25 people, respectively). In Ukraine, according to State Standards 2.2.4-171-10 water wells were identified: 1) the presence of coliforms ≤ 1/100 ml, 2) the absence of pathogenic enterobacteria in 1 cubic dm, 3) the absence coli-phage in 1 cubic dm (this index is the additional for water from surface sources in the field of income from sewage treatment plants to the distribution network, as well as groundwater), 4) the absence of enteroviruses in 10 cubic dm. In contrast to the European standard the colony counts is not required.

As seen from the established microbiological regulations comparison in both standards are focused to determination of water fecal contamination. Amount of indicators in the Ukrainian normative document results from the characteristics of water sources in our country and that is rational.

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SEARCH OF SUBSTANCES WITH ANTIMICROBIAL PROPERTIES AMONG THE DERIVATIVES OF 2,4-DISUBSTITUTIVE 3-(1-ARYL-IMIDAZOLE-5-IL)PROPEN-1-IONS AND PROPANE-1-IONS

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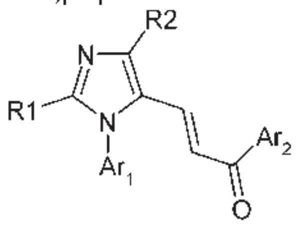
The problem of resistance to antibiotics is one of the most serious threats of the global health care [Wellington E. M. H. et all., 2013; Laxminarayan R. et all., 2013; Leibovici L. et all., 2016]. Antibiotic resistance can become a global cause of mortality in case new effective antibiotics are not found and supplied adequately [Amábile-Cuevas C.F., 2015]. Scientists from many countries focuse their attention on the necessity to search new antimicrobial means, as only few new antibiotics are synthesized a year, while the rate of resistance to them increases very fast [Spellberg B. et all., 2013; Sengupta S. et all., 2013]. For example, since the beginning of this century no more than 5 new antibiotics have been synthesized, that is rather unfavourable statistics considering the rates of resistance development of microorganisms to them.

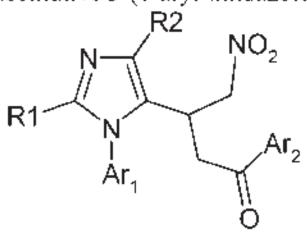
One of the ways out is to intensify the elaboration and introducing new antimicrobial drugs [Feshchenko Yu.I., 2009]. Therefore, the search of new antibiotics and modification of those already known with the aim to improve them is one of the main directions of modern medicine [Todosiychuk T.S. et al., 2011].

To study *in vitro* antimicrobial activity of new derivatives of 2,4-disubstitutive 3-(1-aryl-imidazole-5-il)propen-1-ions and 2,4-disubstitutive 3-(1-aryl-imidazole-5-il)propane-1-ions.

To study antimicrobial properties 17 new derivatives of 2,4-disubstitutive 3-(1-aryl-imidazole-5-il)propen-1-ions and 2,4-disubstitutive 3-(1-aryl-imidazole-5-il)propane-1-ions were selected with the following general formula:



derivatives 2,4-disubstitutive 3-(1-aryl-imidazole-5-il)propen-1-ions



derivatives 2,4-disubstitutive 3-(1-aryl-imidazole-5-il)propane-1-ions

Their antimicrobial properties were studied by means of common methods of two-time series dilution in a liquid nutrient medium and detection of minimal bacteriostatic and fungistatic concentrations (MBsC, MFsC), minimal bactericidal or fungicidal concentrations (MBcC, MFcC) of compounds concerning reference strains of gram-positive bacteria (*Staphylococcus aureus* ATCC 25923), gram-negative bacteria (*Escherichia coli* ATCC 25922) and yeast-like fungi (*Candida albicans* ATCC 885-653).

A part of the derivatives of 2,4-disubstitutive 3-(1-aryl-imidazole-5-il)propen-1-ions was not found to reveal any antimicrobial properties. For example, both minimal bacteriostatic or fungistatic (MBsC, MFsC) and bactericidal or fungicidal (MBcC, MFcC) concentrations of 2653, 2661 and 2664 compounds concerning reference-strains of gram-positive bacteria (*Staphylococcus aureus* ATCC 25923), gram-negative bacteria (*Escherichia coli* ATCC 25922) and yeast-like fungi (*Candida albicans* ATCC 885-653) are more than 1000 mcg/ml. At the same time, the compounds 2001 and 2654 reveal moderate antibacterial and antifungal properties – their MBsC and MFsC are on the level of 250 mcg/ml, MBcC and MFcC - 500 mcg/ml. It should be noted that the rest of the compounds (2652, 2663 and 2810) do not possess antibacterial properties concerning *Staphylococcus aureus* ATCC 25923 (minimal bactericide concentrations of the compounds indicatedare more than 1000 mcg/ml), but they demonstrate a moderate antimicrobial activity concerning *Escherichia coli* ATCC 25922 and/or *Candida albicans* ATCC 885-653 (MBsC and MFsC are on the levels of 250 mcg/ml, MBcC and MFcC - 500 mcg/ml).

Higher antimicrobial activity was found in the derivatives of 2,4-disubstitutive 3-(1-aryl-imidazole-5-il)propane-1-ions as compared to the derivatives of 2,4-disubstitutive 3-(1-aryl-imidazole-5-il)propen-1-ions. Thus, minimal bacteriostatic concentration of the examined derivatives of 2,4-disubstitutive 3-(1-aryl-imidazole-5-il)propane-