

MODERN ASPECTS OF USING BACTERIOPHAGES

Sheremet M. P., Kalyuzhnaya O. S.

Scientific supervisor: doctor farm. sciences, professor Strilets O. P.

National University of Pharmacy, Kharkiv, Ukraine

biotech@nuph.edu.ua

Nowadays the increase in distribution of an antibiotic steady activators which received the name of epidemic of resistance is noted. According to WHO data already more than 60% of activators are steady against the basic antibiotics, and in 10-20 years most of them will gain resistance to germicides. Use of antibiotics and other germicides can be a little effective and is often followed by disturbances of normal microflora what can lead to formation of immunodeficiency and allergization. The basic causes of antibiotic resistance at microorganisms can be considered: absence of structure which the antibiotic affects; impermeability for antibiotic (the majority of Gram-negative bacteria are unreceptive to Penicillinum as the cellular wall is protected by an additional membrane); ability of microorganism "to extort" antibiotic from a cell; ability of a microorganism to transfer antibiotic to inactive form. At this conditions one of effective components of fight the formed antibiotic resistance is development of alternative antibiotic drugs. Bacteriophages can act as such drugs. Bacteriophage – is a virus which is selectively affects bacteria. Specificity of phages is the cornerstone of their name on patrimonial or specific accessory of bacteria, sensitive to them. There is a bacteriophage staphylococcal, streptococcal, salmonellae, pyocyanic and others. In order the bacteriophage could be recommended for use in clinical practice, it is necessary, its compliance to the following parameters: the high virulence causing a full lysis of bacteria; — conservation of activity in cell owner; the possibility of long storage with conservation of lytic activity; lack of activity concerning representatives of a resident microbiota. Bacteriophages are issued as in form of monomedications and in the form of the combined medications. Medications of bacteriophages possess a series of advantages: highly effective biological medications of antibacterial action for prophylaxis and treatment of infectious diseases; during use don't break normal biocenoses of the person; are irreplaceable in case of fastness of originators of infections; can be applied in complex therapy with other medicines; can be applied at treatment of dysbacterioses in a complex with medications normalizing an intestine microbiota; are safe in pediatric practice; are highly stable and can be stored during rather long period of time. Efficiency in use of bacteriophages consists in lack of contraindications and complications, compatibility with other medications, active impact on antibiotic-resistant microbes. Thanks to these properties, bacteriophages are estimated as future medications for successful fight against infections.