

CREATION OF NEW CLASSES OF ANTIBIOTICS FOR THE TREATMENT OF DISEASES CAUSED BY HIGHLY RESISTANT BACTERIA

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Introduction. The use of antibiotics has been a great achievement in the treatment of some infectious diseases. To date, there are more than 2 000 types of antibiotics isolated from various sources. However, irrational chemotherapy has led to resistant strains and super-resistant bacteria. This situation encourages the solution of the problem that arose by finding new approaches, including the search for new classes of antimicrobial drugs.

Aim. Study of modern research on the search for new antibiotics.

Materials and methods. Analysis of the scientific literature on the research topic.

Results and discussion. To date, research is being conducted to find new classes of antibiotics for the treatment of infections caused by superbacteria. Some achievements have already been published in scientific journals. Developers use different approaches to solving this problem.

An interesting area is the work of scientists from Denmark, who are working on the first phase of preclinical trials to develop a drug of the class of pleuromutilins, aimed at resistant strains of enterococci, streptococci and staphylococci. It is believed that resistance to drugs of this class may occur slowly, its indicators and indicators of resistance and development of cross-resistance will be low. The drug was particularly potent against USA300 and additional MRSA strains and, importantly, did not show cytotoxicity in four mammalian cell lines.

Scientists from Princeton University (USA) have discovered a new antibacterial substance active against gram-positive and gram-negative bacteria that does not cause resistance. Due to a dual mechanism based on folate metabolism and action on the cell membrane of bacteria, bacteria of different groups and resistant to antibiotics have not been able to develop resistance to the new substance.

Conclusions. The issue of treatment of resistant bacterial infections is becoming more acute every year. To this end, modify the old antibiotics, but perhaps to completely solve this problem will help create new classes of antibiotics that do not cause resistance in microorganisms.