

Міністерство освіти і науки України
Сумський державний університет
Наукове товариство студентів, аспірантів,
докторантів і молодих вчених СумДУ

ПЕРШИЙ КРОК У НАУКУ

Матеріали
ІХ студентської конференції
(Суми, 25 лютого 2018 року)



Суми
Сумський державний університет
2018

ANTIMICROBIAL RESISTANCE. CAUSES AND SOLVING.

Haykova O.O., *student*; SSU, group LS-613

One of the triumphs of modern medicine is the development of antibiotics and other antimicrobial agents. The basis of the action of antibacterial drugs is to suspend the activity of pathogens due to inhibition of metabolic-specific microorganisms. But today the development of resistance to them by microbes begins to become challenge for scientists.

The resistance of microorganisms to antibiotics can be natural and acquired. Natural-resistant mechanisms include: enzymatic destruction or inactivation of the drug and alteration of the drug's target site. Acquired-resistant mechanisms include: prevention of penetration to the target site within the microbe and the rapid efflux (ejection) of the antibiotic.

Wrong use of antibiotics has become commonly used throughout the world, as they have a wide range of effects, have no contraindications and were easy to treat. Sometimes it is absolutely absurd, especially when self-medication is used when they are used to treat a headache, and not use to infections for which they were created.

We have new solutions for today to overcome antimicrobial resistance. The technology of researchers from the University of Boston, thanks to which a powerful antimicrobial agent, theixobactin, was synthesized in 2015, may allow the acceleration of the discovery of new antibiotics, which will help overcome the resistance to microorganisms. Unlike most antibiotics acting on protein molecules of bacteria, the mechanism of action of theixobactin is its ability to appear with the lipids involved in the synthesis of the cell wall of bacteria.

Accordingly, antibiotic resistance is a major problem in the treatment of infections. For today about 700,000 deaths attributable to AMR. That's why a lot of researchers is dedicated to find out ways to solve this problem roundly and as soon as possible.

1. USMLE Step 1 Lecture Notes 2017. Immunology and Microbiology, Kaplan Medical
2. www.nature.com/articles/nature17636

Adviser: Kurochkina V.S., *teacher*