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# Re-engineered antibiotic could fight drug-resistant bacteria

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The US scientists have created a promising second-generation antibiotic to fight against the bacteria that commonly cause respiratory and other infections, which also includes the sexually transmitted gonorrhea disease.

Researchers have led by St Jude Children's Research Hospital, have developed the antibiotics by changing the chemical structure of Spectinomycin, an old and weak antibiotic which was first introduced in the 1960s.

"The rising problem of drug-resistant bacteria has created an urgent need for the new antibiotics that would help in mechanization use for the treatment of adults and children globally," said Mr Richard Lee, corresponding author, St Jude Children's Research Hospital. In the study, the scientists have constructed based on the research which was published in the 1980s, to create a new and more potent versions of Spectinomycin.

In the laboratory, the Spectinomycin analogs have blocked the growth of pneumococcal bacteria strains which are resistant to commonly used antibiotics. The second-generation Spectinomycins demonstrated an increased in anti-bacterial activity against several other commonly caused respiratory infections such as Haemophilus influenza and Moraxella catarrhalis.

The Spectinomycin versions were also more effective against the bacteria which are mostly responsible for the cases like Legionnaires' disease and other sexually transmitted diseases such as gonorrhea and chlamydia.
The scientists used a structure-based design to map and re-engineer, to understand and study, how Spectinomycin binds to

the ribosomes of clinically important bacteria with a focus on producing compounds that would work on a broader field of disease-causing bacteria.

"The re-engineered Spectinomycin has a new catch that would help entering in a broader range of bacteria, and would bind ribosome and block protein synthesis", said Mr Lee.