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# Synthetic antibiotic developed by Sask. researchers to combat drug-resistant bacteria

Entirely synthetic, the antibiotic may be less prone to bacterial resistance mechanisms

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Stavriniades said the team is always on the hunt for new antibiotics and that search is even more crucial now as the number of multi-drug resistant microbes increases. (Francisco Bonilla/Reuters)

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A synthetic antibiotic which could be used to treat drug-resistant bacteria such as the one responsible for staph infections has been created by a team of Saskatchewan-based researchers.

The research team is made up of researchers from the University of Regina and University of Saskatchewan. They recently published a joint paper in the journal *Scientific Reports*.

The study states that the synthetic antibiotic, named Phosphopyricin, is entirely inorganic which renders it "evolutionarily foreign" to bacterial agents such as the ones which cause staph infection, neonatal meningitis and endocarditis.

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The antibiotic has been effective in lab research against two bacteria which have been given the moniker "ESKAPE" pathogens because of the health risks they pose, but also because of their ability to escape treatment.

The acronym is derived from the Enterococcus faecium, Staphylococcus aureus, Klebsiella pneumoniae, Acinetobacter baumannii, Pseudomonas aeruginosa, and Enterobacter species of bacteria. They can cause respiratory and urinary tract infections, among other ailments.

John Stavriniades, a microbiologist at the U of R, is one of the researchers.

Stavriniades said the team is always on the hunt for new novel antibiotics

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and that search is even more crucial now as the number of microbes which are multi-drug resistant increases.

By having more antibiotics in development, it ensures people continue to have them for treatment, he said.

Stavrindes said people are still exploring the use of synthetic antibiotics but tend to stick to focusing on naturally isolated products.

"We know that those natural products that are present have anti-microbial properties," Stavrindes said. "These synthetics, you know again, sometimes it's a bit of a shot in the dark as to whether or not you will hit on something that is effective."

Toxicity always has to be evaluated, he added. In acute doses in mice, the antibiotic's toxicity is low.

With files from Samantha Brace


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