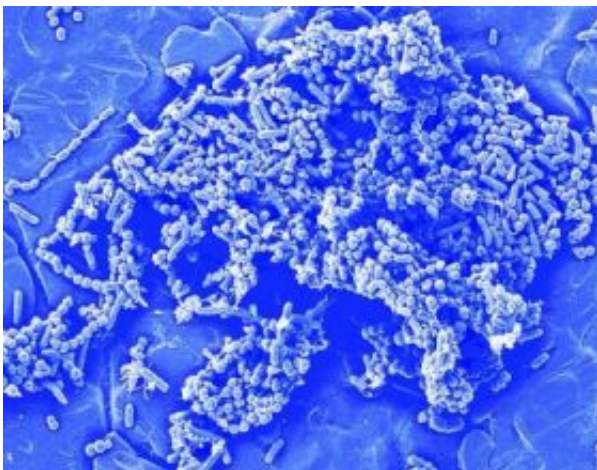


Toward a Rosetta Stone for Microbes' Secret Language

December 10 2007



Decoding the chemical language of bacteria will help researchers fight antibiotic-resistant infections and dangerous biofilms (shown) that foul medical implants. Credit: USDA

Scientists are on the verge of decoding the special chemical language that bacteria use to “talk” to each other, British researchers report in a commentary article that appeared in the November issue of *ACS Chemical Biology*, a monthly journal. That achievement could lead to new treatments for antibiotic-resistant bacteria, including so-called superbugs that infect more than 90,000 people in the United States each year, they note.

David Spring, Martin Welch, and James T. Hodgkinson explain that

researchers long have known that bacteria communicate with each other. Microbes release small molecules that enable millions of individuals in a population to coordinate their behavior.

Disease-causing bacteria use this language to decide when to infect a person or other host. Decoding the structure and function of compounds involved in this elaborate signaling process, known as “quorum sensing,” could lead to new medicines to block the signals and prevent infections.

The report describes development of a group of powerful compounds, called N-acylated homoserine lactone (AHL) analogues that are effective against a broad-range of bacterial types, including those that cause diseases in humans. These compounds are “some of the most potent synthetic modulators of quorum sensing” identified to date, they say.

In addition to showing promise for fighting antibiotic-resistant infections, the compounds may help prevent the growth of biofilms that foul medical implants and cause tooth decay and gum disease, the scientists note.

Source: American Chemical Society

Citation: Toward a Rosetta Stone for Microbes' Secret Language (2007, December 10) retrieved 23 April 2024 from <https://phys.org/news/2007-12-rosetta-stone-microbes-secret-language.html>

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