New plastic-like materials may say 'shhhh' to hush disease-causing microbes

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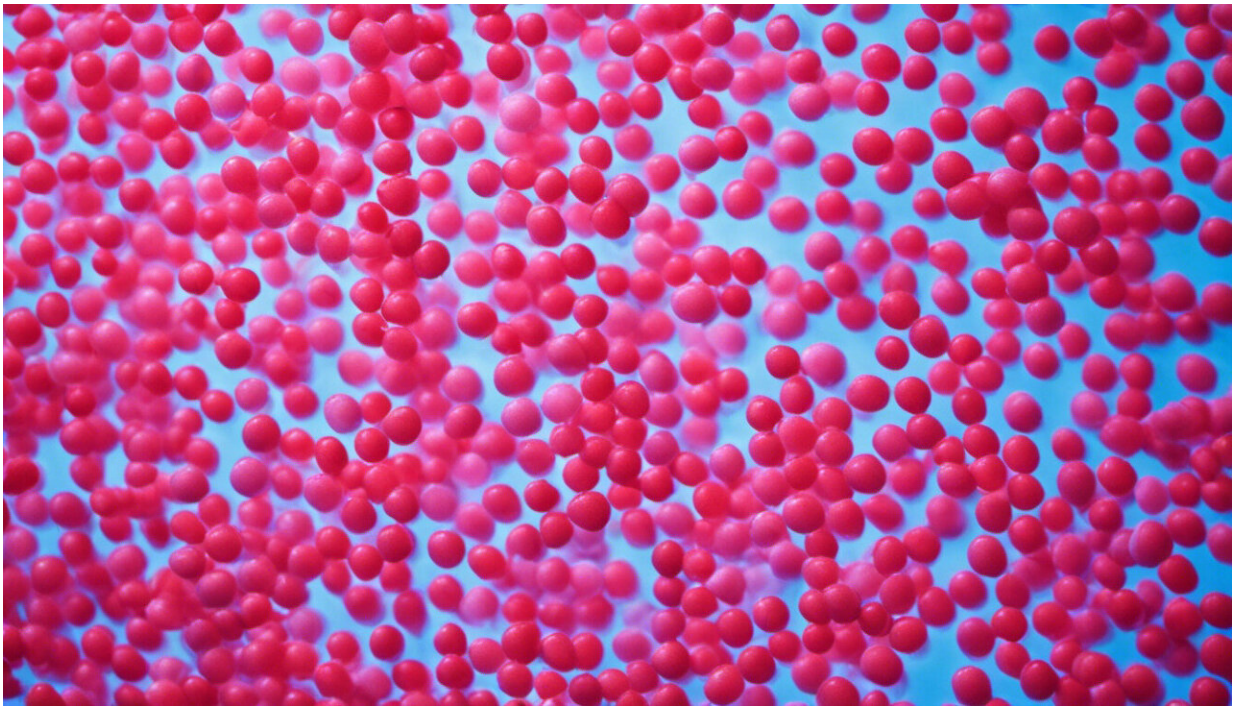

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Scientists are reporting success in a first attempt to silence the biochemical conversations that disease-causing bacteria use to marshal their forces and cause infections. In a study in ACS' monthly journal, *Biomacromolecules*, they describe use of specially designed plastic-like materials to soak up the substances that bacteria produce and pass to one

another as messages.

Elena Piletska and colleagues point out that more and more disease-causing bacteria are developing resistance to the effects of antibiotics. The problem has sparked a global scientific quest for new antibiotics, and totally new approaches for dealing with bacteria that have caused millions of deaths throughout human history. One increasingly promising approach, they explain, blocks the chemical signals bacteria use to launch infection, a signaling process called "quorum sensing."

The scientists designed special plastics, similar to those dentists use to repair damaged teeth, to capture signaling molecules in laboratory experiments and thwart microbes' attempts to start an infection. The plastics also reduced the ability of the bacteria to form biofilms. Bacteria form these slimy layers inside medical tubing, water supply pipes, and other surfaces and use them as a refuge to grow and multiply.

More information: "Attenuation of Vibrio fischeri Quorum Sensing Using Rationally Designed Polymers", *Biomacromolecules*.

Provided by American Chemical Society

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