

# Have our bodies held the key to new antibiotics all along?

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As the threat of antibiotic resistance grows, scientists are turning to the human body and the trillion or so bacteria that have colonized us—collectively called our microbiota—for new clues to fighting microbial infections. They've logged an early success with the discovery of a new antibiotic candidate from vaginal bacteria, reports *Chemical & Engineering News (C&EN)*, the weekly newsmagazine of the American Chemical Society.

Matt Davenport, a *C&EN* contributing editor, explains that the human microbiota produces thousands of small molecules. Some have been discovered and tested, but by and large, very little is known about most of them. However, it could be well worth finding out more. Doctors are already prescribing pharmaceuticals based on small molecules made by exotic bacteria from the earth and sea, meaning our own microbes could be an untapped and accessible source of novel drugs. But rifling through all of the microbiota's natural products for a hit is like searching for a needle in a haystack.

To shrink that haystack, one team of scientists took a systematic, computer-assisted approach. They designed software to compare the microbiota's collective genes, or microbiome, against genes that are already known or suspected to play a role in producing small molecules that help keep microbes, and maybe their hosts, healthy. The team found more than 3,000 such gene clusters. One of those, from the vaginal bacteria *Lactobacillus gasseri*, contains the code for a small molecule that is very similar to a recently discovered antibiotic now undergoing

clinical testing. When the scientists tested the Lactobacillus molecule in the lab, they found it attacked Gram-positive bacteria, some of which can cause human illness.

**More information:** 'Mining the Microbiome' - [cen.acs.org/articles/92/i39/Mi ... me-Therapeutics.html](https://cen.acs.org/articles/92/i39/Mi...me-Therapeutics.html)

Provided by American Chemical Society

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