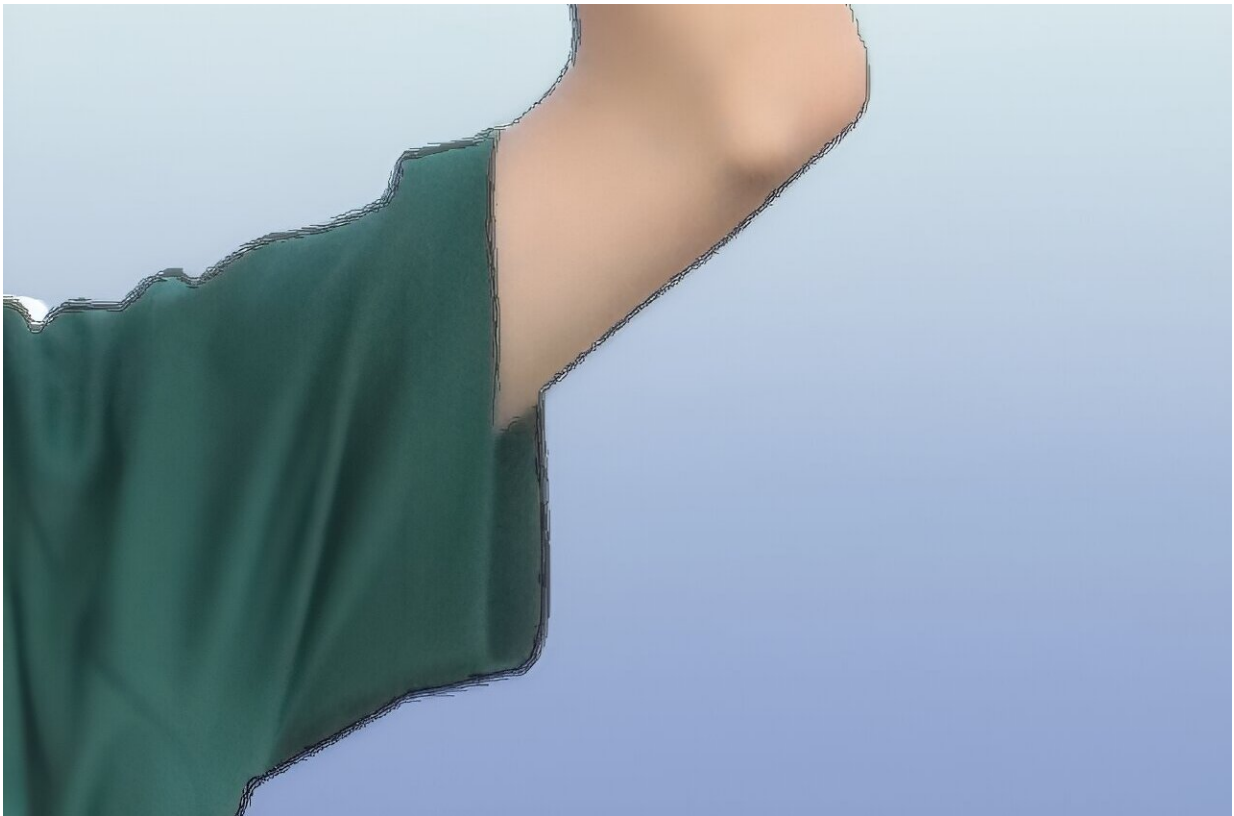


Using bacteriophage-derived lysin to target odor-causing bacteria in armpits

April 23 2024



Native bacteria metabolize sweat in the armpits, causing odor to arise. Credit: Osaka Metropolitan University

Body odor from the armpits comes from bacteria metabolizing sweat produced by the apocrine glands. These bacteria are native to our skin,

but the odors produced differ among people. Generally, people use deodorants on their armpits, but perhaps there is a way to get rid of the bacteria.

To find out, a research team led by Osaka Metropolitan University Professor Satoshi Uematsu and Associate Professor Kosuke Fujimoto at the Graduate School of Medicine collected body fluid samples from the armpits of 20 men that were deemed healthy. The study was published in the [Journal of Investigative Dermatology](#).

A subjective olfactory panel classified them into two types of odors, with 11 having a more noticeable smell. The researchers analyzed the matter produced from bacterial metabolism and the DNA of the skin microflora and found an increased presence of odor-causing precursors in those 11 samples along with a proliferation of *Staphylococcus hominis* [bacteria](#).

The team then synthesized a lysin from a bacteriophage, or virus that attacks bacteria, that infects *S. hominis*. During in vitro experiments, this lysin was found to target only *S. hominis*, not other bacteria normally present on the skin.

"We performed a large-scale metagenomic analysis of the skin microflora using the SHIROKANE supercomputer at the University of Tokyo and found that *S. hominis* is important in the development of odor," said Assistant Professor Miho Uematsu in the Department of Immunology and Genomics. "The identification of the lysin that attacks *S. hominis* is also the result of the comprehensive genome analysis."

Dr. Miki Watanabe, who is part of the Department of Immunology and Genomics and the Department of Dermatology added, "Axillary [armpit] odors are one of the few dermatological disorders in which bacteria are the primary cause. Although many patients suffer from axillary odors,

there are few [treatment options](#). We believe that this study will lead to a new therapy."

More information: Miki Watanabe et al, Targeted lysis of *Staphylococcus hominis* linked to axillary osmidrosis using bacteriophage-derived endolysin, *Journal of Investigative Dermatology* (2024). [DOI: 10.1016/j.jid.2024.03.039](https://doi.org/10.1016/j.jid.2024.03.039)

Provided by Osaka Metropolitan University

Citation: Using bacteriophage-derived lysin to target odor-causing bacteria in armpits (2024, April 23) retrieved 17 May 2024 from <https://phys.org/news/2024-04-bacteriophage-derived-lysin-odor-bacteria.html>

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