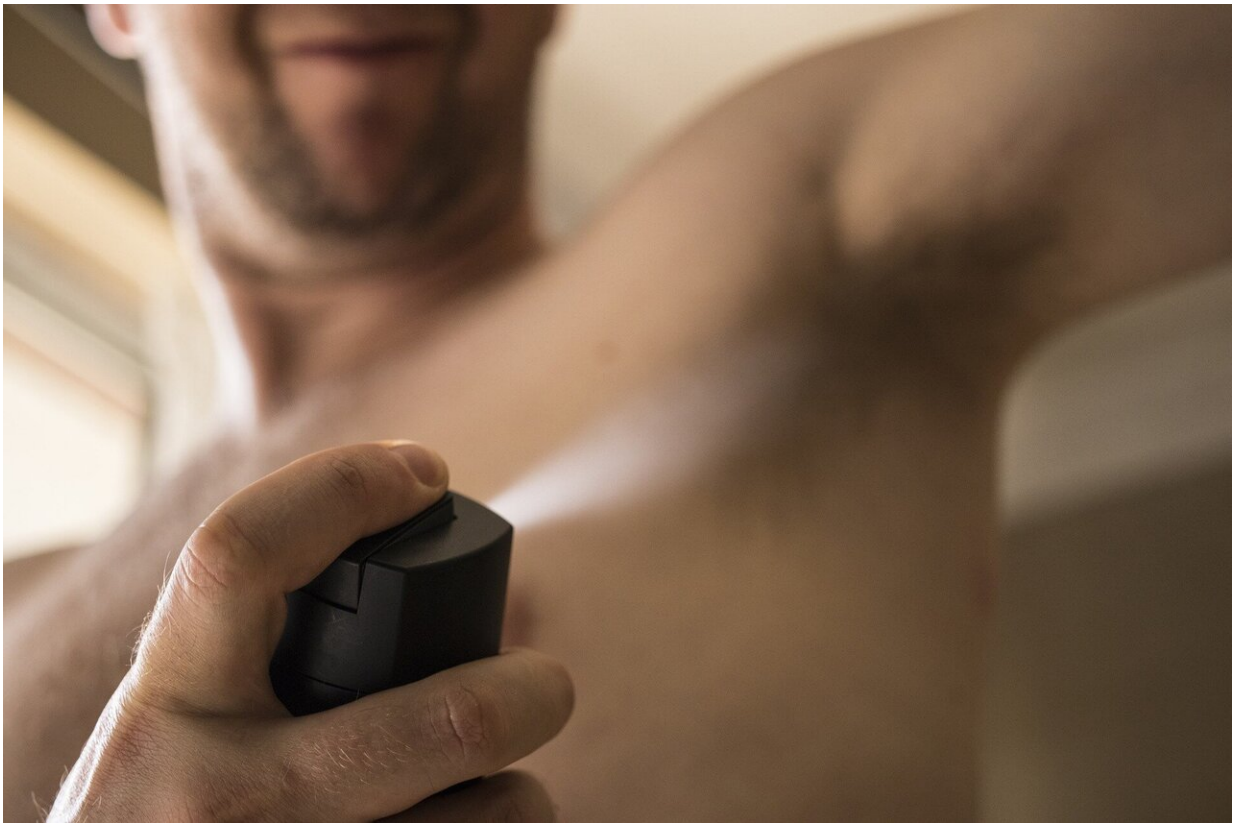


# Life in the pits: Scientists identify the key enzyme behind body odor

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Credit: Pixabay/CC0 Public Domain

Scientists have discovered a unique enzyme responsible for the pungent characteristic smell we call body odor or BO.

Researchers from the University of York have previously shown that only a few bacteria in your armpit are the real culprits behind BO. Now the same team, in collaboration with Unilever scientists, has gone a step further to discover a unique "BO enzyme" found only within these bacteria and responsible for the characteristic armpit [odor](#).

This new research highlights how particular bacteria have evolved a specialized enzyme to produce some of the key molecules we recognize as BO.

Co-first author Dr. Michelle Rudden from the group of Prof. Gavin Thomas in the University of York's Department of Biology, said: "Solving the structure of this 'BO enzyme' has allowed us to pinpoint the molecular step inside certain bacteria that makes the odor molecules. This is a key advancement in understanding how body odor works, and will enable the development of targeted inhibitors that stop BO production at source without disrupting the armpit microbiome."

Your armpit hosts a diverse community of bacteria that is part of your natural skin microbiome. This research highlights *Staphylococcus hominis* as one of the main microbes behind body odor.

Furthermore, the researchers say that this "BO enzyme" was present in *S. hominis* long before the emergence of *Homo sapiens* as a species, suggesting that [body](#) odor existed prior to the evolution of modern humans, and may have had an important role in societal communication among ancestral primates.

This research represents an important discovery for Unilever R&D, made possible by its long-standing academic-industry collaboration with the University of York. Unilever co-author Dr. Gordon James said: "This research was a real eye-opener. It was fascinating to discover that a key odor-forming [enzyme](#) exists in only a select few armpit [bacteria](#)—and

evolved there tens of millions of years ago."

"The molecular basis of thioalcohol production in human [body odor](#)" is published in the journal *Scientific Reports*.

**More information:** The molecular basis of thioalcohol production in human body odour, *Scientific Reports* (2020). [DOI: 10.1038/s41598-020-68860-z](#)

Provided by University of York

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