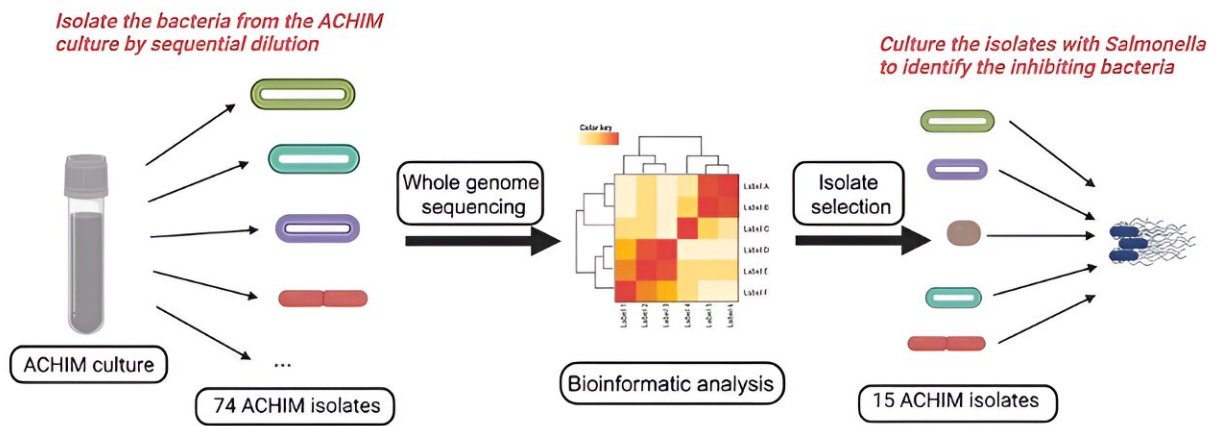


Gut microbes' pathogen defense arsenal unveiled

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(a) Schematic representation of the ACHIM isolates and *Salmonella* co-culture experiment workflow. Credit: *Gut Microbes* (2024). DOI: 10.1080/19490976.2024.2356275

A study conducted by researcher Juan Du's research group at the Karolinska Institutet sheds light on the capabilities of our gut microbes and their metabolites. The findings reveal potent inhibitory effects on the growth of antibiotic-resistant bacteria and suggest interactions and signaling between gut microbes and pathogens.

The [study](#), published in the journal *Gut Microbes*, focuses on identifying key microbes within the [gut microbiome](#) that inhibit the growth of

pathogens, particularly [antibiotic-resistant strains](#).

Strains from *Clostridium perfringens*, *Clostridium butyricum*, and *Enterobacter maltosivorans* and their [metabolites](#) were found to directly inhibit the growth of pathogens, including multi-drug-resistant ones.

The study also reveals novel dipeptide features, suggesting interactions and signaling between gut microbes and pathogens.

"Multidrug-resistant microorganisms pose a global threat, and understanding the role of gut microbiota is crucial. Metabolites derived from these microbial communities play a significant role in regulating biochemical processes in the human body.

"Despite this, only a limited number of gut microbes and their bioactive metabolites have been explored so far," explains author Juan Du at the Department of Microbiology, Tumor, and Cell Biology, Karolinska Institutet.

"We plan to expand our screening to include a broader collection of commensal bacteria from various body sites. We'll conduct mechanism studies to understand how these compounds function on pathogens, especially antibiotic-resistant strains," says Juan Du.

More information: Liqin Cheng et al, The protective role of commensal gut microbes and their metabolites against bacterial pathogens, *Gut Microbes* (2024). [DOI: 10.1080/19490976.2024.2356275](https://doi.org/10.1080/19490976.2024.2356275)

Provided by Karolinska Institutet

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