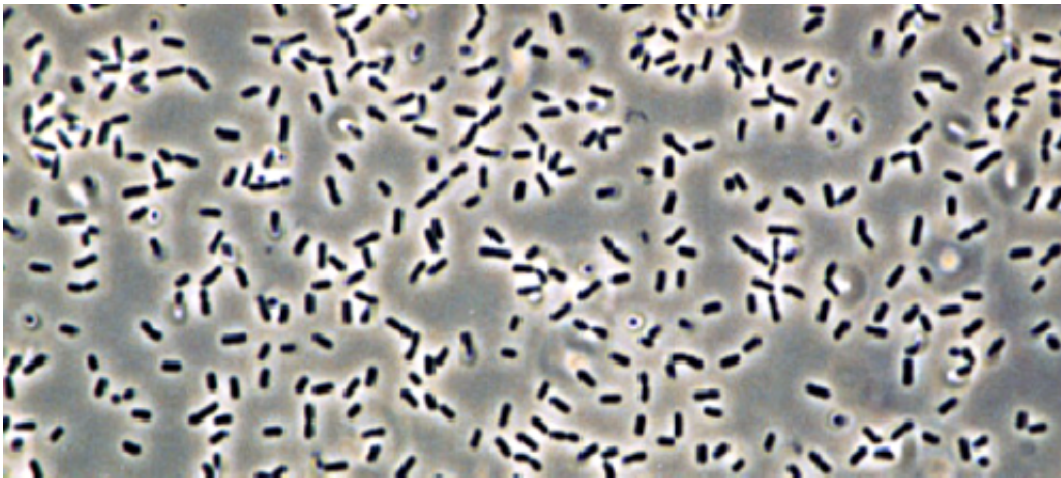


# Antibiotic resistance in spore-forming probiotic bacteria

June 21 2019

---



*Bacillus Subtilis*. Credit: Kookaburra / Wikipedia.

New research has found that six probiotic *Bacillus* strains are resistant to several antibiotics. Genetic analysis of other *Bacillus* strains has shown genes that contribute to antibiotic resistance towards various types of drugs and methods in which they can still grow in their presence. The research is presented at ASM Microbe, the annual meeting of the American Society for Microbiology.

"This data can provide us with insights into what genes are contributing to antibiotic resistance and whether they can be transferred to other [bacteria](#) that cause harm to humans and domesticated animals," said Emmanuel Flores, a Masters student at CSU Fresno. "This work can be

used as a form of monitoring antibiotic resistance and make accurate predictions in potential antibiotic resistance threats found in functional foods and [livestock feed](#)," he said.

*Bacillus* is a group of bacteria that has been commonly used in probiotic products. These products are claimed to have some health benefit to the gut of those who consume these products. This research aimed to determine if any *Bacillus* bacteria used in probiotics are resistant to antibiotics that are commonly used in health clinics.

"Since bacteria have shown to be capable of transferring antibiotic resistance to other bacteria, we aim to determine if probiotic *Bacillus* are capable of transferring their own antibiotic resistance to bacteria that cause illnesses such as [food poisoning](#)," said Flores.

Their results thus far have shown us that [probiotic](#) *Bacillus* has the potential to transfer antibiotic resistance. However, further tests need to be performed to determine what types of harmful bacteria are likely recipients of antibiotic resistance. The researchers plan to run a test that will facilitate the transfer of antibiotic resistance bookended by a test that will determine which [antibiotics](#) the harmful bacteria have gained resistance against.

Probiotics are available to the general public and come in the form of many functional foods and livestock feeds. "Monitoring the spread of antibiotic [resistance](#) by focusing on probiotics has been overlooked and should take place since the global impact of [antibiotic resistance](#) is increasing," said Flores.

Laboratory work was performed by Emmanuel Flores who is a Masters student in Dr. Van Laar's laboratory at CSU Fresno. He has worked under the guidance of Dr. Van Laar, Dr. Sstrom (UC Merced), and Mo Kaze (Ph.D. student, UC Merced). Funding for this study was provided

by the Bridge to Doctorate program and the CSU Fresno Graduate Net Initiative's Graduate Research Grant awarded to Emmanuel. This work will be presented at ASM Microbe 2019 at the Moscone Center in San Francisco, California on Friday, June 21st, 2019.

Provided by American Society for Microbiology

Citation: Antibiotic resistance in spore-forming probiotic bacteria (2019, June 21) retrieved 25 April 2024 from

<https://phys.org/news/2019-06-antibiotic-resistance-spore-forming-probiotic-bacteria.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.