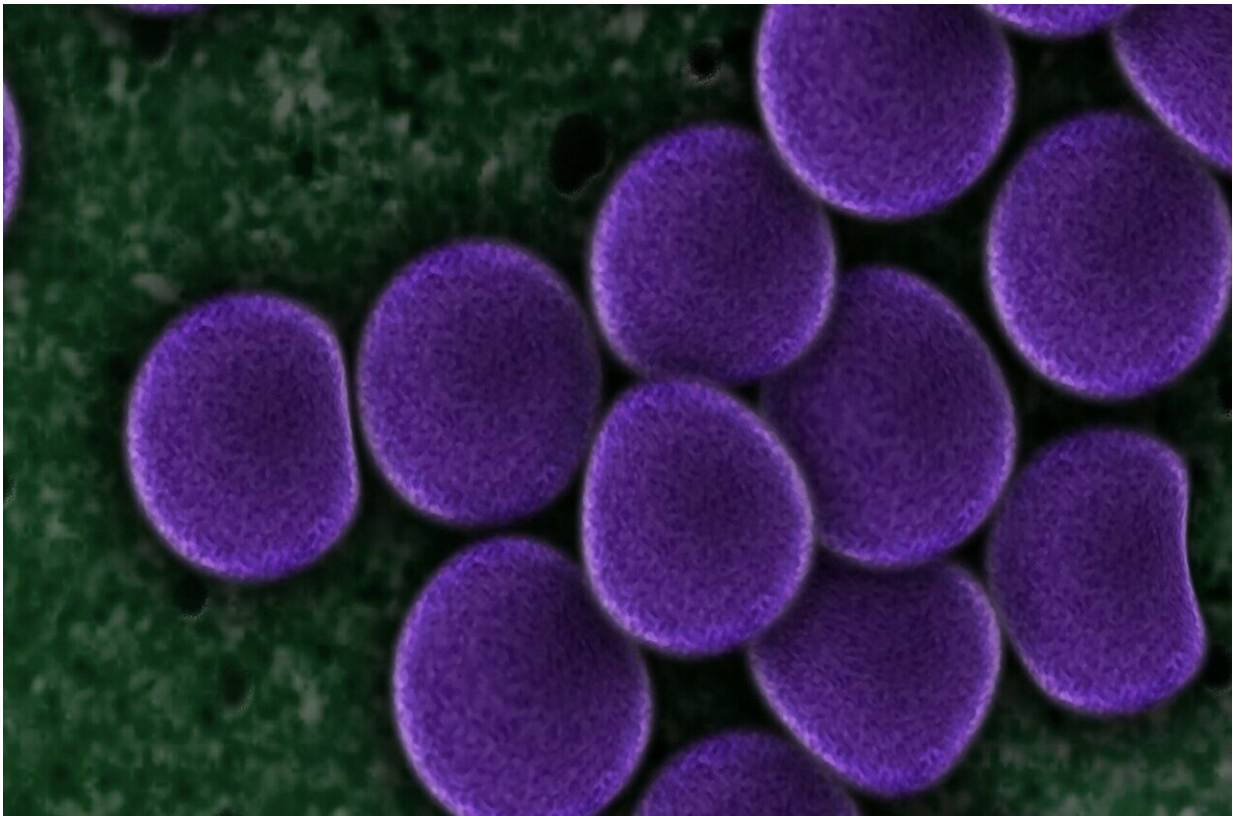


Meet *Clostridium butyricum*—the bacteria that helps keep us feeling our best

April 7 2024, by Bunmi Omorotionmwan



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Our friend here, *Clostridium butyricum* (also known as *C butyricum*), is one of the hardest working microbes living in our gut. Without its exhaustive work, we might find ourselves constantly feeling a little under

the weather.

C butyricum is a microbe that lives in the soil as well as our gut. It's commonly found in vegetables and sour milk. This microbe prefers to grow in environments lacking oxygen and exists in a mutualistic relationship with the [human host](#)—meaning the human body helps it to grow and survive, and in return it provides our body with benefits.

C butyricum has been so named because of its ability to produce the short-chain fatty acid butyrate, which is a major source of energy for our [intestinal cells](#). It produces butyrate in the gut by fermenting fiber from foods such as whole grains, fruits and vegetables.

This short-chain fatty acid has been linked to many [health benefits](#)—all thanks to the hard work of C butyricum.

It's been suggested that C butyricum helps change the gut microbiome's composition by increasing the numbers of [beneficial microbes](#) in the gut—such as Lactobacillus and Bifidobacterium, which aid digestion and protect against pathogens.

This is a particularly useful function as it helps restore the [gut microflora](#) if it's been disrupted by a course of antibiotics. The C butyricum MIYARI strain has even been used to support the [treatment of diarrhea](#) caused by [antibiotic use](#).

C butyricum also promotes a [robust immune system](#) by improving the gut barrier function, preventing harmful pathogens from colonizing the gut. It reduces [inflammation in the bowel](#) (colitis) and is linked with [lower risk of colorectal cancer](#).

This microbe also very kindly supports our digestive health by helping to [breakdown and absorb nutrients](#) from complex foods such as whole

grains and vegetables.

Interestingly, there's an association between an [abnormal gut microbiome and depression](#). Some research has suggested that C butyricum may play a role in [protecting against depression](#). More research into this area is needed to understand exactly how C butyricum helps support mental health.

Health supplement

Some strains of C butyricum have been used as probiotics, which are live microorganisms that provide health benefits when taken in sufficient quantities. C butyricum is widely found in many [commercial probiotics](#) throughout Japan, South Korea and China. It's also been [authorized for use](#) as a food supplement in Europe.

Another ongoing area of research is investigating whether C butyricum can be used to [develop oral vaccines](#) against infections which cause vomiting and diarrhea—including rotavirus and cholera.

By genetically engineering this microorganism to bear specific antigens (a substance which triggers the [immune system](#)), C. butyricum can be repurposed to deliver a vaccine to the gut, needle free—providing immunity against diseases.

The use of a genetically engineered strain of C butyricum as a vaccine delivery platform is considered safe as the organism itself is a probiotic and is already safely being consumed as a food supplement with no side effects. It's also suitable for [global distribution](#), as it doesn't require costly refrigeration to store and ship it.

While there's still so much more we can learn about this microbe and its [potential benefits](#) for our health and well-being, we know for sure that

including fiber-rich foods and a [balanced diet](#) can help support our gut and deliver C butyricum to the microbes living there.

This article is part of Meet Your Gut Microbes, a series about the rich constellation of bacteria, viruses, archaea and fungi that live in people's digestive tracts. Scientists are increasingly realizing their importance in shaping our health—both physical and mental. Each week we will look at a different microbe and bring you the most up-to-date research on them.

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