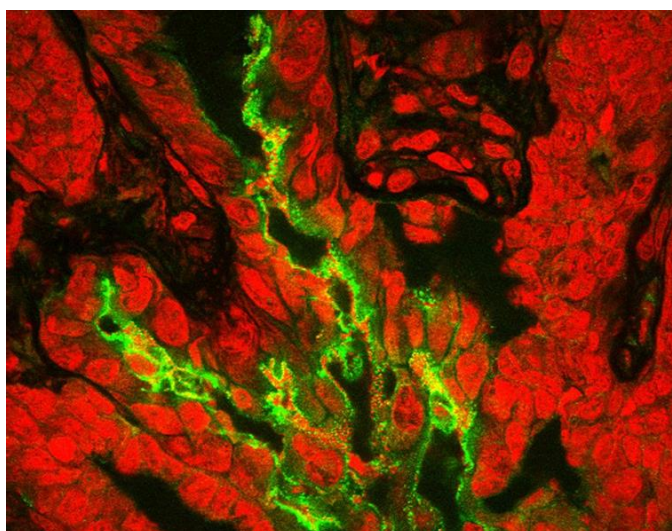


Pioneering Prebiotics

Poor diet, stress, age and overuse of antibiotics deplete the beneficial microbes in our digestive system, with a variety of knock-on effects for our wellbeing. Gastrointestinal disorders such as Inflammatory Bowel Disease and Irritable Bowel Syndrome are common and rising, and some experts believe a lack of positive bacteria in the gut are partly to blame. These microbes also help us fight off infection, and are implicated in other processes including sleep and brain function. But they need a healthy gut-environment in which to thrive.



In **1995** Glenn Gibson and Marcel Roberfroid invented the **concept of 'prebiotics'**. Since then, Glenn – now Professor of Food Microbiology at University of Reading – has pioneered the development of evidence-based prebiotic products.

Prebiotics are fuels for the good bacteria that are inside us, allowing them to grow and multiply. Prebiotics are unaffected by heat or the ravages of passing through our bodies, whereas probiotics (products that actually contain good bacteria) can be.

Professor Gibson and the team at Reading wanted to develop a prebiotic that beneficial gut bacteria could most readily use, so they harnessed the very tools used by these bacteria in nature. Using enzymes from a strain of *Bifidobacterium bifidum*, they processed lactose into prebiotic carbohydrates called galactooligosaccharides. The idea was that these bacterial-origin prebiotics would be the optimum fuel for good gut microbes.

Indeed, **in a trial of healthy volunteers**, the prebiotic product markedly increased good gut bacteria compared to prebiotics manufactured using commercially-available enzymes (which often come from yeast).

Health benefits in clinical trials

The research group has since reported an impressive range of positive effects in trials of the product; **markers of immune system function improved in elderly people**; symptoms of IBS reduced in **a trial of sufferers**; **world travellers cut their risk of diarrhoea**; and **markers of the metabolic syndrome improved in overweight adults**.

Taking discovery to market

In 2003 the prebiotic, Bimuno, was commercialised by the biotechnology company, Clasado – now an enterprise with around 50 employees and a cross-continental presence. The product is thriving in the growing prebiotic market, **already estimated to be worth \$3 billion worldwide**.

Bimuno was used by Team GB to help avoid tummy upsets in Rio in 2016, and is recommended to prevent travellers' diarrhoea by nutritionists working with international sporting stars. In the USA Bimuno is included as a branded ingredient in several supplements and nutraceuticals.

Potential of prebiotics

As our understanding of gut microbes develops, Professor Gibson believes that the role of prebiotics in wellness will increase. He is now investigating their potential impacts on cholesterol control, obesity and gut-brain interactions, including autism.

Credits and related reading

More information about Bimuno can be found at <https://www.bimuno.com>. Clasado has supported this research since the late 1990s.

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