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Prebiotics gain ground in digestive health arena

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Rich Troyer | Dec 14, 2020

Consumers are increasingly paying attention to gut health—and making the connection between diet and a healthy gut microbiome. As they continue to gain a deeper understanding of how what they eat affects their gut health, demand will rise for not only foods that contain probiotics, but also prebiotics.

Recent reports project significant growth within the digestive product and ingredient industry over the next several years. Acumen Research and Consulting projects the probiotic ingredient market to reach approximately \$78 billion by 2026, whereas a report released by Global Market Insights estimates the prebiotic fiber market to hit over \$8 billion that same year. Comet Bio commissioned a consumer study in 2019 which found that 70% of Americans want to increase their fiber intake, and 4 out of 5 consumers are interested in healthy, sustainable dietary fibers.

Prebiotics vs. probiotics

Prebiotics and probiotics are easily confused but play distinct roles in maintaining good digestive health. Probiotics are good bacteria that fight off bad bacteria in the gut and help establish a healthy microbiome. Prebiotics are soluble fibers often found in grains, vegetables and fruits. They are nondigestible, meaning human enzymes cannot break them down. As a result, prebiotics work symbiotically with probiotics, serving as food for the good bacteria in helping to promote a healthy microbiome.

Many probiotic strains exist, as well as many prebiotic dietary fibers—so gut health is not a one-size-fits-all formula. As such, some probiotics work better with specific prebiotics and vice versa. No scientifically validated “super prebiotic” optimizes every strain of probiotic in the gut.

A diverse diet of prebiotics is needed to optimize an array of probiotics within the gut. The result is a symbiotic relationship that builds a healthy microbiome. This positive working relationship can be established when probiotics are supplemented with a varied set of prebiotics, and they work together to promote a healthy gut.

For example, the prebiotic arabinoxylan has been clinically shown to support the growth of *Bifidobacteria*, a strain associated with key gut health benefits (*Front Microbiol.* 2016;7:925). Some prebiotics, such as inulin, are not as selective in promoting only good bacteria and are linked to promoting not as beneficial strains, including pathogenic (salmonella) and opportunistic (*Klebsiella*) (*Zh Mikrobiol Epidemiol Immunobiol.* 2000;1:79-80). *Klebsiella* is a bacterium associated with ankylosing spondylitis (an inflammatory disease) and increased intestinal permeability.

Prebiotic tolerability concerns

Another issue with many popular prebiotic fibers is that they are needed in high quantities to be effective and can cause gastrointestinal (GI) distress. This is partly because many individuals are sensitive to oligosaccharides, which unfortunately constitute many popular dietary fibers. For example, people on a low-FODMAP (fermentable oligo-, di-, mono-saccharides and polyols) diet are cautioned to avoid certain fibers like fructooligosaccharides (FOS), commonly derived from inulin, or galactooligosaccharide (GOS) derived from dairy products.

Looking to the future of prebiotics, expect more better-tolerated options. Arabinoxylan is a plant fiber that is not an oligosaccharide, but a polysaccharide, which (as Arrabina, from Comet Bio) showed in unpublished research to have better tolerability in the gut. Though effective at a low dose of 2.2 g, the clinical trial suggested consumers can confidently take up to 12 g/d of Arrabina without the worry of GI stress including gas, bloating and nausea.

Meeting consumer desire for prebiotics

Over half of consumers regularly or occasionally suffer from digestive issues, according to proprietary consumer research conducted by Murphy Research. These consumers are well-informed and looking for solutions, including prebiotics. Ninety percent of them could identify at least one benefit associated with consuming a prebiotic. Of those, 52% perceived that prebiotic fibers aid in digestion, 50% said they improve gut health, 43% said they promote overall health and 30% thought they help strengthen immunity. Some consumers even made the connection between prebiotics and inflammation, skin health and energy. Based on this data, consumer awareness of the gut microbiome and the importance of consuming prebiotics is notable.

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