

Immunity via gut health: Galam exec pegs prebiotics' supportive role against viral infections

31 Jul 2020 --- Prebiotics can stimulate the production of beneficial probiotics in the gut, which in turn contributes to overall health and immunity against viral infections. This is according to Dr. Fernando Schved, Vice President of R&D, Support & CSO at Galam, who speaks to *NutritionInsight* about the company's short chain Fructo-Oligosaccharides (sc-FOS) ingredient GOFOS and how it can promote a healthy gut. "Colon microbiota contributes to our well-being by activating either directly or indirectly certain colon immunity components," he explains.

"Prebiotics can selectively stimulate the proliferation of Bifidobacteria and certain Lactobacillus species populating the colon and are resistant to upper digestive system action," Schved highlights. "Certain soluble oligosaccharides are well known prebiotics and have been documented as a beneficial nutritional tool to support a healthy colon. Moreover, prebiotics also act by contributing to immune function and resistance towards potential pathogens."

The company presented its flagship ingredient GOFOS at ProSweets 2020, earlier this year. GOFOS is a fructooligosaccharide derived from beet sugar that, apart from gut health-related properties, can offer sweetening power of up to 30 percent.

Immunity is increasingly coming to the fore, as COVID-19 has put a focus on preventative health. Many players are tapping into this rising trend, flagging ingredients that can potentially protect from viral infections and boost overall health. At a time, when the world is looking to health and nutrition experts to preserve health, the market is ripe with NPD and innovative formulations that are pegged for further growth.

Pre- and probiotics acting in concert

The human colon plays a central role in our immunity, and functions via several mechanisms, including the GALT system (Gut Associated Lymphoid Tissue), Schved outlines. “Normobiosis” is defined as the beneficial equilibrium of gut microbiota, which provides competence against potential pathogenic threats. *Bifidobacteria* and certain *Lactobacillus* species are an important group of bacteria that can help sustain a healthy gut and stimulate the immune system by proliferating in our colon.

“sc-FOS is one group of strong prebiotics highly documented for their beneficial roles in colon well-being. The shorter oligosaccharides consisting sc-FOS – namely Kestose and Nystose – have been documented to be more rapidly and specifically utilized by Bifidobacteria and certain Lactobacillus species, therefore able to provide a proven prebiotic effect at lower doses when compared to longer chain oligosaccharides (including also poly-fructans),” Schved adds.

The biological basis for the preferential “fermentability” lies in evolutionary history, which resulted in these bacteria exhibiting unique enzymatic abilities, which enable them to selectively prefer short oligosaccharides, he explains.

The stimulatory action of such prebiotics on the immune system is believed to happen via contact with gut dendritic cells (DC) which are responsible for sampling immune active components from gut content and intraepithelial lymphocytes (IEL). These can react while activated by food ingested components. Also, prebiotics such as sc-FOS can positively modulate the innate immune barrier by modifying integrity of “Tight Junction” or by causing signals from epithelial cells to the underlying immune cells layer.



Supporting the colon

Short-chain fatty acids (SCFA) resulting from the fermentation of sc-FOS (butyrate, acetate and lactate) can assist by directly acidifying the colon lumen. This helps in preventing its potential colonization by harmful pathogenic bacterial strains. In addition, SCFA plays a direct role in sustaining the integrity of the gut epithelial barrier by either direct or indirect pathways.

“Respiratory infections like the common flu are often a result of viral agents. This type of viral infection results in millions of annual death cases all over the world. Respiratory infections pose a significant risk factor threatening human health, especially for elderly people and those with compromised immunity,” Schved notes.

Gut microbiological interventions can assist in balancing the gut micro-ecological environment and maintain the intestinal barrier function. This means prebiotics are perceived as potentially supporting nutritional tools that contribute to the optimal maintenance of the immune resistance including viral infections and secondary bacterial infections.

In an animal study, Trompette et al. (*Immunity* 48, 992–1005, May 15, 2018) reported that prebiotics and SCFAs have dual beneficial effects on the immune system allowing mice to better resist viral infections such as influenza. “The conclusion of this study was that prebiotics, probably via SCFA production resulted in an immune equilibrium, balancing innate and adaptive immunity so as to promote the resolution of influenza infection while preventing immune-associated pathology,” Schved underscores.

“In this context prebiotics such as sc-FOS can play a role in providing a nutritive supporting tool for healthy humans especially for those with a weakened immune system by sustaining an improved healthy colon and enhancing its role in innate immunity.

Recently Galam initiated the operation of its [new plant](#) for sc-FOS branded GOFOS followed by a worldwide reach out. Enhancement of gut health and immunity by nutritive ingredients such as GOFOS may provide an additional non-medicinal supporting day-to-day tool especially in times such as those we are facing now with the outbreak of COVID-19.

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