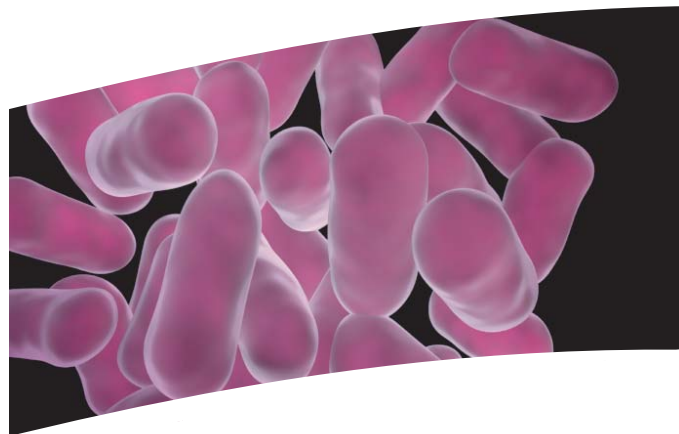


## VitaSugar™-IMO Functionality Research Projects

Collaborative research projects are currently underway with the University of Alberta with objectives to demonstrate prebiotic and fiber properties of BioNeutra's VitaSugar™-IMO (isomalto-oligosaccharides).

The data from the studies showed that in-vitro fermentation experiments using VitaSugar™-IMO as a source resulted into a significantly high growth of *Bifidobacterium* and *Lactobacillus*. The quantification of

*Lactobacillus* and *Bifidobacterium* in the fecal samples of animals fed VitaSugar™-IMO diet was the highest compared to a control diet and diet with inulin. The overall population growth of pathogens like *Bacteroides* and *Clostridium* were at the least.



A short-chain fatty-acid (SCFA), *i.e.*, butyrate, which confers tremendous health benefits to the host, *e.g.*, strengthening the immune system and lowering the cholesterol, was showed to be highest in the animals fed with IMO diet compared to the control diet and inulin during a study of 5-7 weeks period. The copy number of fecal rDNA in rats fed with IMO was significantly higher in case of *Lactobacillus* and lowered in case of *Clostridium* and *Bacteroids*.

Based upon the above findings, it has been validated (an already established fact from nine different studies) that isomalto-oligosaccharide, *i.e.*, VitaSugar™-IMO, acts as a prebiotic and is readily consumed by *Bifidobacterium* and *Lactobacillus*. This prebiotic property of VitaSugar™-IMO consequently showed an indirect confirmation of the product's dietary fiber function in-vivo.