

Three Trends in Prebiotics you can't Succeed without Leveraging

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As a growing body of evidence maps out the relationships between dietary intake, the microbiome, and health outcomes, prebiotics is one key element on the roadmap of microbiome-benefiting products. Based on our recent discussions with executives from emerging companies in this space along with tracking market activity, we've aggregated our learnings into three major predictions about the future of prebiotics:

1. **Effectiveness at lower doses will be a key differentiator:** Prebiotics (and probiotics) continue to expand beyond dietary supplement form, incorporated more and more into packaged foods and beverages. As CPG companies look to add prebiotics into non-obvious formats, particularly beverages, prebiotics that alleviate formulation hurdles will be valued. One such means of accomplishing this goal is utilizing a prebiotic that is effective at a lower dose. We've recently spoken with two companies that highlight this feature as part of their value proposition: Green teaspoon and Prenexus Health. Green teaspoon sells a polyphenol-based prebiotic, currently on the market as a supplement under the brand name "Good gut". Working with several large beverage (and food) companies at this time to add a B2B component to its business model as an ingredient supplier, it claims the dosage of its ingredient is 1% of what is needed on a weight basis compared to a traditional prebiotic fiber (e.g. inulin). Prenexus Health is aiming to launch its xylooligosaccharide (XOS) prebiotic ingredient in partnership with DSM Nutritional Products sometime in 2018 or 2019. Albeit not close to 1% of what is normally needed on a weight basis, it still claims to have shown effectiveness at 50% to 80% lower doses.
2. **Prebiotics with inherent sweetness will become more prominent:** CPGs have long struggled to replace the functional properties of sucrose beyond sweetness when tackling their sugar reduction goals. One functionality of sucrose beyond sweetness that is particularly hard to replace is bulk, which makes reformulation of packaged foods with popular high-intensity sweeteners like stevia especially troublesome. This is where prebiotics with inherent sweetness can offer a win-win-win: reduced sucrose content, minimized loss (if any) in bulk, and a microbiome-benefiting health effect. We've seen activity from two companies that we've interviewed in the past, OptiBiotix and BioNeutra, that indicates prebiotics will indeed become a more integral part of the sugar reduction toolbox. OptiBiotix filed three patents in April 2018 to protect the production methods and application areas of its prebiotic fiber product SweetBiotix, which can supposedly be tailored to fit different sweetness and/or bulk requirements. BioNeutra, a producer of an isomaltooligosaccharide called VitaFiber, saw its revenue grow twofold from 2015 to 2017, going from 16 million CAD to 32 million CAD, and 2018 financial data shows its top line is still growing.
3. **Human milk oligosaccharides (HMOs) will be a high-growth area:** HMOs, naturally present in breast milk, serve an important function of stimulating growth and activity of desired microbes in the infant gut. Given that researchers have shown a significant difference between the microbiome signatures of breastfed infants versus formula-fed infants, manufacturers of infant formula have the opportunity to drastically improve formulations by adding specific prebiotic (and probiotic) cocktails that result in infant microbial signatures that mimic those seen in breastfed infants. Two companies producing HMOs that we've profiled, Jennewein Biotechnologie and Inbiose, along with FrieslandCampina, have received regulatory approval from the EU within the past year, paving the way for market expansion of HMOs. Jennewein Biotechnologie received its approval in November 2017, Inbiose (in partnership with DuPont) received its approval in March 2018, and FrieslandCampina received its approval in May 2018. An earlier-stage company that we've profiled, Sugarlogix, should not be forgotten, though. Instead of *E. coli* (which the others use), it uses yeast, which is likely to obtain higher yields.

Our predictions show how our individual interviews and market observations from the past year or so related to prebiotics are forming into stronger signals about the future of the space. Clients, particularly ingredient manufacturers, should look to capitalize on these trends as prebiotics become further integrated into diversified food and beverage formats.

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