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For the World Within

Cultivating a healthy gut with
proven natural prebiotic fibers



Speakers



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Consumers want healthy solutions for maintaining gut health.

Proven by science and cultivated by nature, we explore the opportunity of prebiotics to deliver a range of health benefits for the gut microbiome. We explore what the future holds for leveraging prebiotics in creating the next generation of postbiotics.

Finally, through the lens of our segmentation of consumers from a health and wellness perspective, we provide insight into how to communicate with consumers about microbiome solutions.

The information provided here is for educational purposes only and should not be used to replace company specific end-product regulatory review for consumer-facing product labeling. Any ingredient information is for educational purposes; specific ingredients are not intended to prevent, treat, mitigate or cure any disease states.



Exploring the potential to support health benefits with prebiotics

Microbiome: A “supporting organ^{*}” essential for health

+ Highly complex

A community consisting of trillions of organisms (bacteria, fungi, parasites and viruses)

+ Highly individualized

Lifestyle, diet, genetics, gender are just a few factors that influence microbiome composition and function (and health)

+ Impactful on health

Research continues to shed light on the microbiome’s ability to impact different aspects of physiology, metabolism etc.

What we eat shapes the structure, composition, and function of the gut microbiome!



Stanford research: A 10-week diet of high fermented foods boost microbiome diversity and improves immune responses.**
APC Microbiome research: eating more fermented foods and fiber daily for just four weeks having a significant effect on lowering perceived stress levels.***

*<https://doi.org/10.1007/s12045-022-1312-7>;

<https://www.hsph.harvard.edu/nutritionsource/microbiome/>;

**<https://doi.org/10.1016/j.cell.2021.06.019>.

*** <https://doi.org/10.1038/s41380-022-01817-y>

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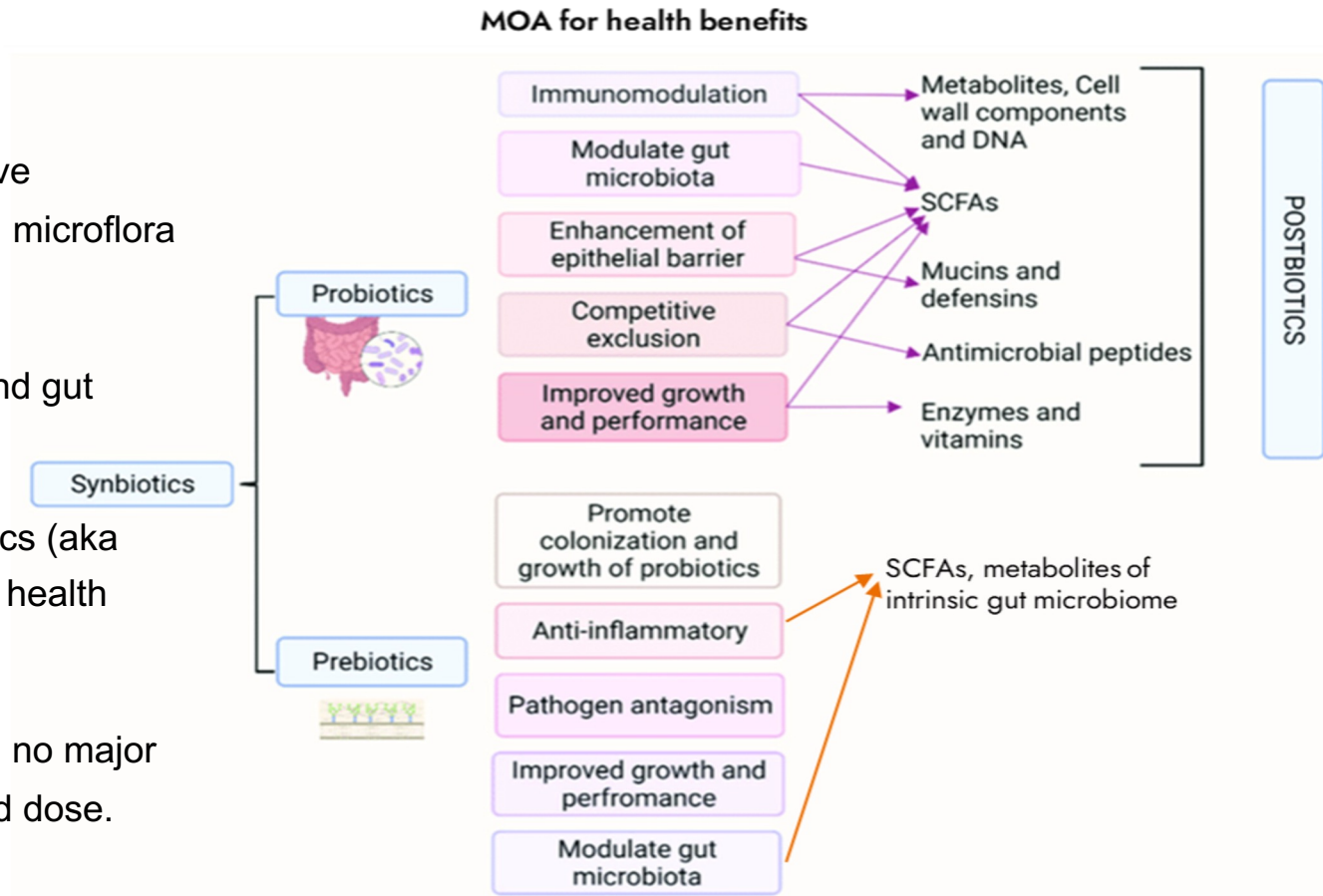
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The world of biotics and the importance of prebiotics to modulate health

- + **“Personalized” benefits** As a food source for live organisms in the gut, prebiotics help support the existing microflora that’s specific to each individual
- + **Farther reach in the gut** prebiotics reach the hind gut where the microbiome is abundant
- + **Synergism** Prebiotics can be combined with probiotics (aka synbiotics) or used to make postbiotics to confer greater health benefits
- + **Tolerance** Aside from occasional bloating/flatulence, no major adverse effects in healthy individual at the recommended dose.
- + **Stability** Not affected by time, longer shelf-life, can be easily stored and transported



<https://doi.org/10.3390/fermentation8070303>

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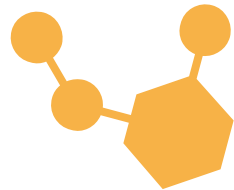
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Naturally-sourced prebiotics meet the growing consumer need for good-for-me, good-for-the-planet



A clean label option: Examples include beta-glucans, inulin, AXOS. Plant-derived through a natural process (i.e. water/steam extraction)



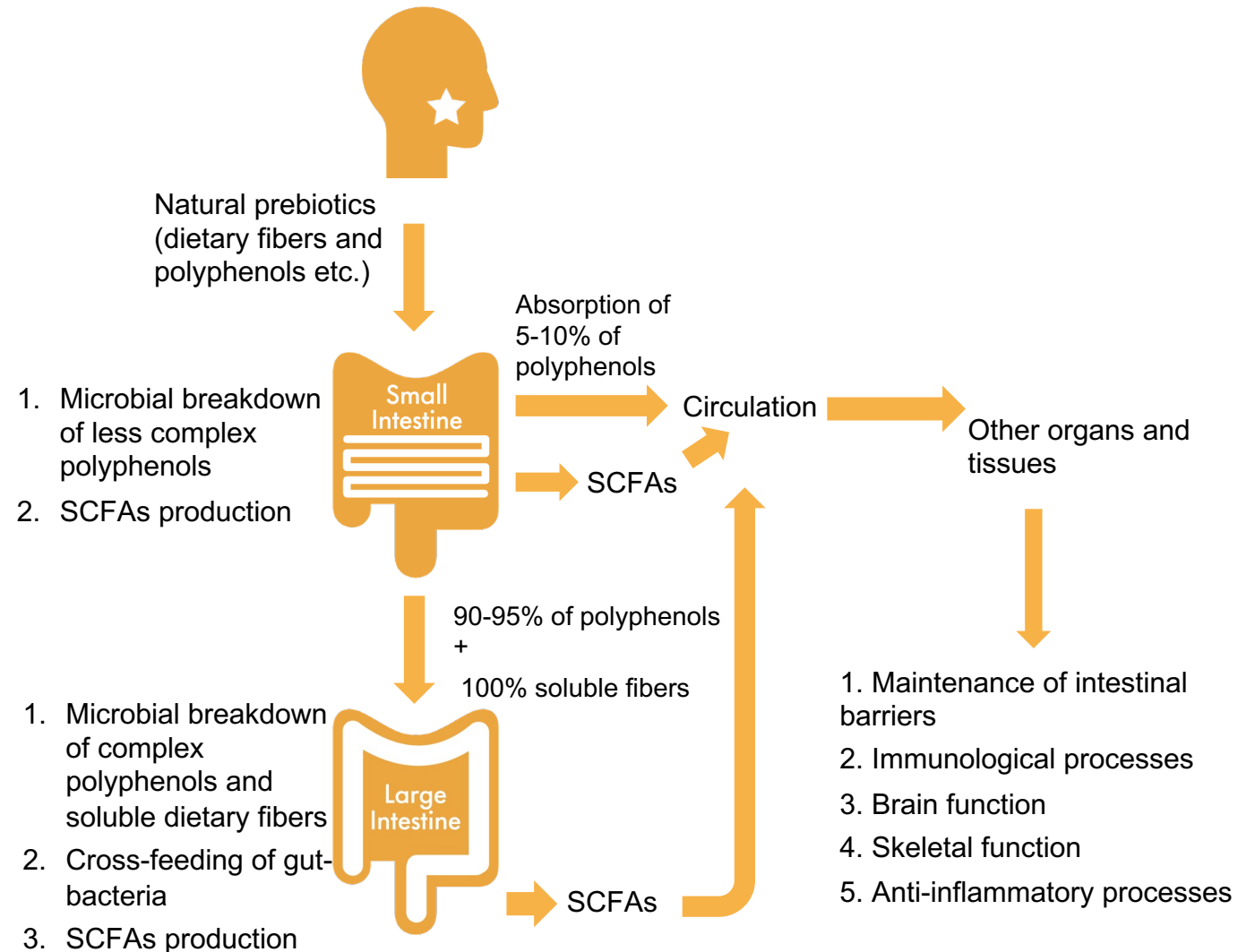
Power of the plant: Plant-sourced prebiotics are also complexed with fibers and polyphenols that may confer additional benefits



Good for the planet: working with sustainable crops and practices and exploring opportunities to leverage side stream materials

The power of the plant: The advantages of plant-based prebiotics

Mix of soluble/ insoluble fibers, phytochemicals, micro and macronutrients in natural prebiotics may have synergistic effect and target multiple host health benefit areas.



<https://doi.org/10.3390/microorganisms10122507>

<https://doi.org/10.3390/ijms23158124>

So, what's next for the microbiome?

Creating the next generation of ingredients with targeted benefits

Prebiotics: Building on research to confer specific health benefits

- Mapping how different prebiotics/prebiotic-plant extracts preferentially affect microbiome
- Connecting the dots: how altering microbiome can target specific health benefits

Synbiotics: the additive effects of prebiotics + probiotics

- Sustain healthy gut homeostasis
- To provide a greater biological, metabolic and/or physiological effect than either one alone

Postbiotics: Capitalizing on the byproducts of the microbiome

- Inanimate whole microbial cells and/or their cell wall components, DNA material with or without a host of microbial metabolites including SCFAs, vitamins, mucins, peptides, play a role in supporting health including, immune defense, anti-inflammation, cognition etc.
- These compounds have both local and systemic effects for health

<https://www.frontiersin.org/articles/10.3389/fnut.2023.1111872/full>

<https://microbialcellfactories.biomedcentral.com/articles/10.1186/s12934-020-01426-w>

Summary

- Plant-derived prebiotics are mixtures of soluble fibers, phytochemicals, micro and macronutrients that may offer health benefits to consumers.
- In terms of safety, stability, efficacy prebiotics are more effective over probiotics.
- The efficacy of natural prebiotics can further be augmented by rational formulation of synbiotic in functional foods.
- Natural prebiotics can be used to make fermented postbiotics, the effector molecules that bring direct health benefits: it is superior in terms of being ready to act, for applications in beverages over prebiotic and probiotics, and also in terms of safety, shelf life over probiotics.
- Based on efficacy, applicability, stability Prebiotic & Postbiotics present more advantage than Probiotics.

Health & Wellness Finders

Why Health & Wellness Finders

How did we get here?

So often, there are “generalizations”

- + **EVERYONE** wants this beverage flavor
- + **EVERYONE** wants to try this new menu item
- + Something is “trending” on TikTok so **EVERYONE** wants it
- + **EVERYONE** is tracking their exercise habits
- + **EVERYONE** is concerned about their health

....and we know this is simply not true.

Why Health & Wellness Finders

How did we get here?

It all started with flavor...Givaudan, along with our long-term research partner Bellomy, created FlavorFinders™- a **COMPLIMENTARY** consumer segmentation based on flavor

- + Seeing how the data changed with the FlavorFinders™ overlay, we wondered if the same approach could apply when it came to foods, beverages, and supplements that targeted health and wellness.

Why Health & Wellness Finders

How did we get here?

And we discovered it did! We partnered with Bellomy again to create “Health & Wellness Finders”, a **COMPLIMENTARY** consumer segmentation that:

- + helps our customers add a layer to understand how consumers adopt new health & wellness products
- + demonstrates how important it is to realize there is no “one size fits all” in this category either



Full study
2500 U.S. Adults



Secondary Research,
Stakeholder
Interviews, Virtual
Consumer Focus
Groups

Trial Study- 64 statements,
300 consumers



+150,000 basis
statements analyzed

Segmentation conducted using
Convergent Cluster Ensemble
Analysis



This survey covered:

- *Overall Health & Wellness
- *Packaged food and beverage consumption
- *Wellness benefits and ingredients
- *Information sources (as well as how it pertains to food and beverage)
 - *Food shopping habits
- *Tracking (participation in tracking food intake, exercise, etc)
- *Motivation factors/adoption of health & wellness products



Health & Wellness Finders

Finding the right product for **every one**, not everyone

Not everyone is created equal, ESPECIALLY in the Health & Wellness space

Health & Wellness Enthusiasts



Health & Wellness Harmonizers



Health & Wellness Reactors



Health & Wellness Laggards



Proactive to H&W?

- Highly proactive

New H&W product

- Not afraid to try something new- sign me up to be first!

New H&W- fine or gimmicks?

- Fine

Botanicals in H&W products?

- Will consume

- Highly Proactive

- Will try it- but I need proof first

- Fine

- Will consume

- Somewhat Proactive

- Some risk adversity- I'll try it but won't be first

- Gimmicks

- Might consume

- Not at all Proactive

- No interest in new stuff- and if I do, I'll wait for proof

- Gimmicks

- Will most likely not consume

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Health & Wellness Finders

The Make-up

Health & Wellness
Enthusiasts



22 %

"We're getting it done...
but there's always more to
discover and more to do"

Health & Wellness
Harmonizers



10%

"Doing it the way nature
intended"

Health & Wellness
Reactors



21%

"I want to do it...I've just got
a lot on my plate right now"

Health & Wellness
Laggards



47%

"No thanks...MAYBE
somewhere down the road...
but right now? Nope "

Health & Wellness Finders

Bringing it to life

Health & Wellness Enthusiasts



Split between knowing/not knowing what it is

TOP 2 BOX PI - 64-70%



Health & Wellness Harmonizers



Know what it is

TOP 2 BOX PI - 55%



Health & Wellness Reactors



Split between knowing/not knowing what it is

TOP 2 BOX PI - 65-68%



Health & Wellness Laggards



Don't know what it is

TOP 2 BOX PI SCORES ARE 37% OR LESS

Microbiome knowledge

Food Experience

Final thoughts

There is a lot at stake by placing bets solely from our gut and intuition and following trends.

This is what keeps us up at night.

Trends and what we know (or think we know) about our consumer are great starting points but there's much more to consider.



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Givaudan
Human by nature

Thank You

