

Why shelf-stable postbiotics enable a wider range of food and beverage applications vs. traditional probiotics.



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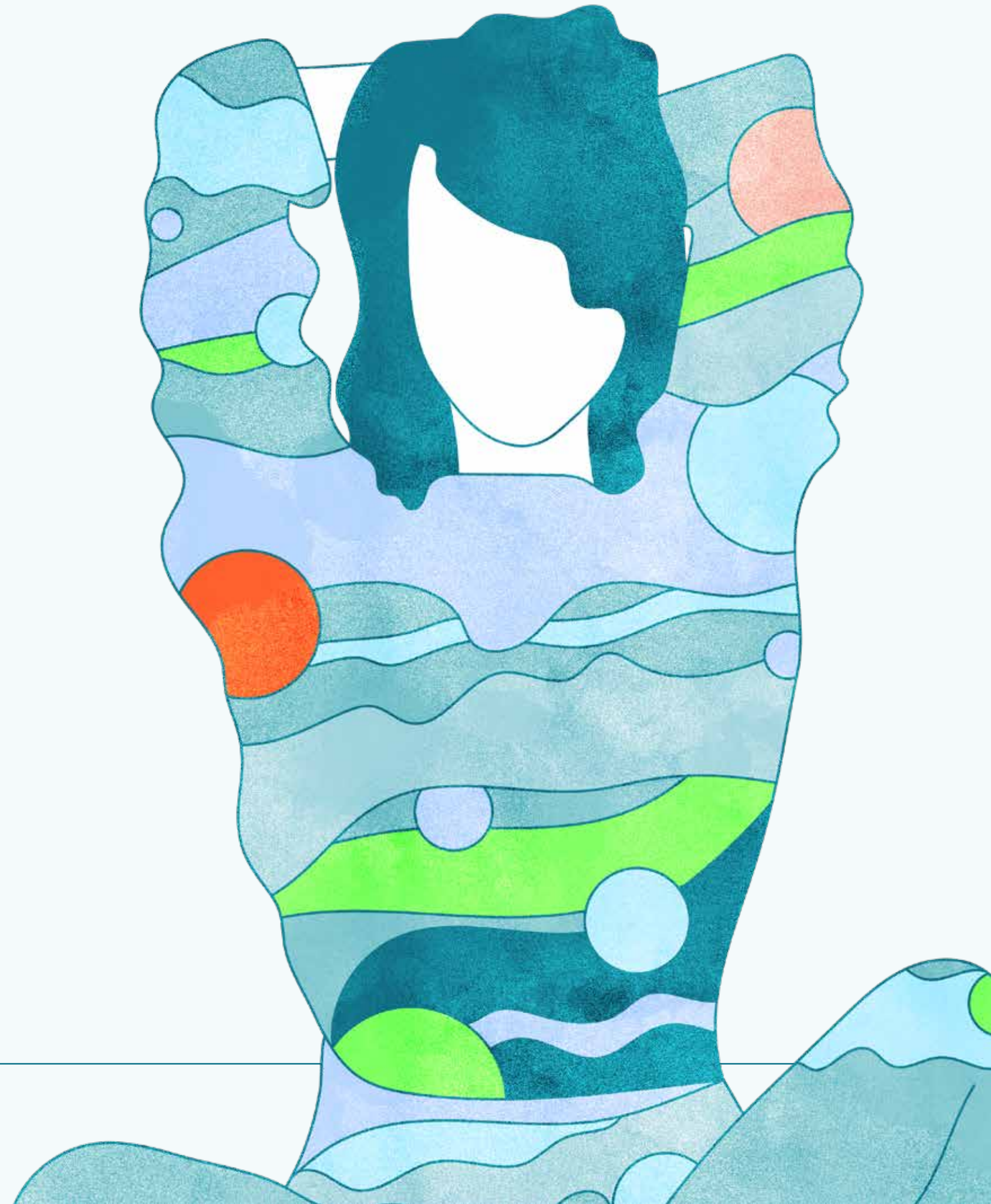
For functional foods and beverages

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 verb biotics™

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# Only 1 in 10 individuals struggling with gut health symptoms use probiotics; postbiotics provide an opportunity to increase consumer adoption

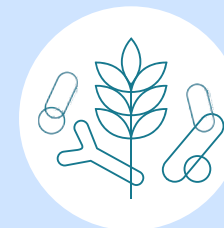
In July 2023, Verb Biotics commissioned an unbiased research study of 2,157 randomly selected Americans, screened to ensure demographics such as age, background, and ethnicity were representative of the greater public.

**70%** of respondents report gut health symptoms

**40%** say those symptoms impact their daily life

Only **1 in 10** gut health sufferers use probiotics

The data showed a huge percentage of Americans suffer from gut health symptoms—often severe enough to interfere with their daily lives. But only a small percentage use probiotics to help relieve those symptoms.



## TAKEAWAY

There's a substantial opportunity to get biotic solutions into the hands of people who suffer from gut symptoms.



# Deliver metabolites for “I feel the effect” results

Consumers want a lot out of their biotics, but mostly, they want to know it’s working. In our 2023 Consumer Gut Health Survey, we found that:

**28%** of people want to experience a noticeable benefit from taking biotics

**24%** of people want to feel their biotic purchase was a good value

**23%** of people want no side effects from taking biotics

**20%** of people want their biotics backed by science



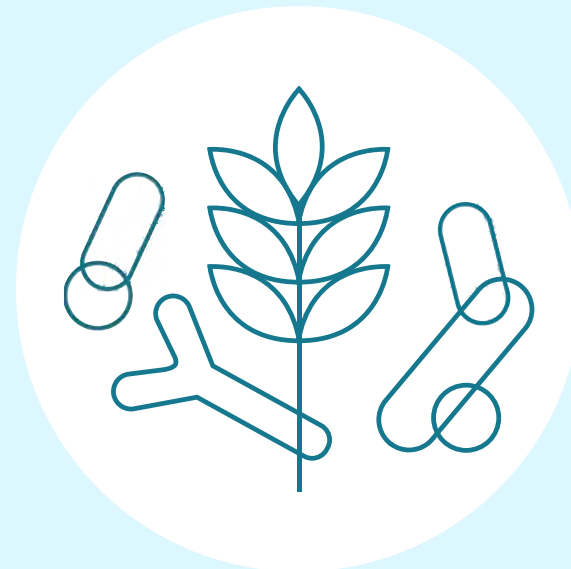
At Verb, we select strains that produce health-enhancing metabolites. Metabolite-driven biotics enable consumers to focus on what the biotic does as opposed to the type of “biotic” or the colony forming units (CFU) count. This enables brands to provide consumers with more concrete information about the benefits they may expect from different biotics.



# Before we continue, let's define what a postbiotic is—and what it's not

## TAKEAWAY

Postbiotics refer to beneficial inactivated microbial cells, not live microorganisms.



## POSTBIOTICS

The International Scientific Association for Probiotics and Prebiotics (ISAPP) defines postbiotics as beneficial, inanimate microbes and/or their components.<sup>1</sup> They must be administered at a host surface, such as the gastrointestinal tract

In lay terms, postbiotics are inactivated microbial cells with or without metabolites, or cell components that have a demonstrated functional health benefit.



## PROBIOTICS

ISAPP defines probiotics as live microorganisms that, when administered in adequate amounts, confer a health benefit on the host.<sup>2</sup>

The key differentiator for probiotics is that the microorganisms are live, not dead. Formulating with live microorganisms, for the most part, limits product formats to tablets, capsules, or refrigerated applications.



## PREBIOTICS

ISAPP defines prebiotics as a substrate that is selectively utilized by host microorganisms conferring a health benefit.<sup>3</sup>

You can view prebiotics as food for the live organisms in your gut.



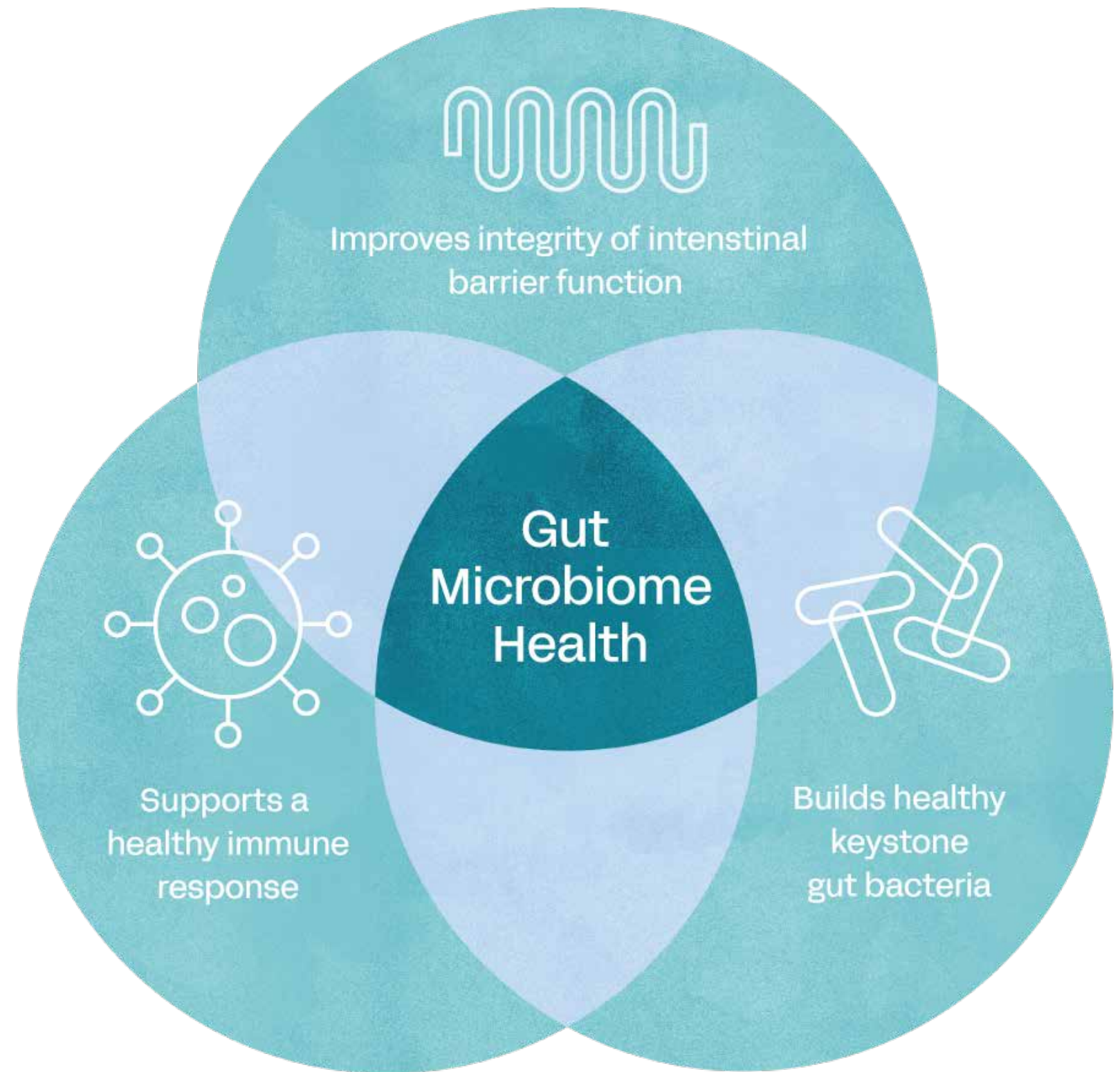
# Keystone Postbiotic™ for foundational gut microbiome health

Functional redundancy from Keystone Postbiotics' intentionally selected ingredients delivers three synergistic mechanisms of action in the GI tract that help support and strengthen foundational gut microbiome health.

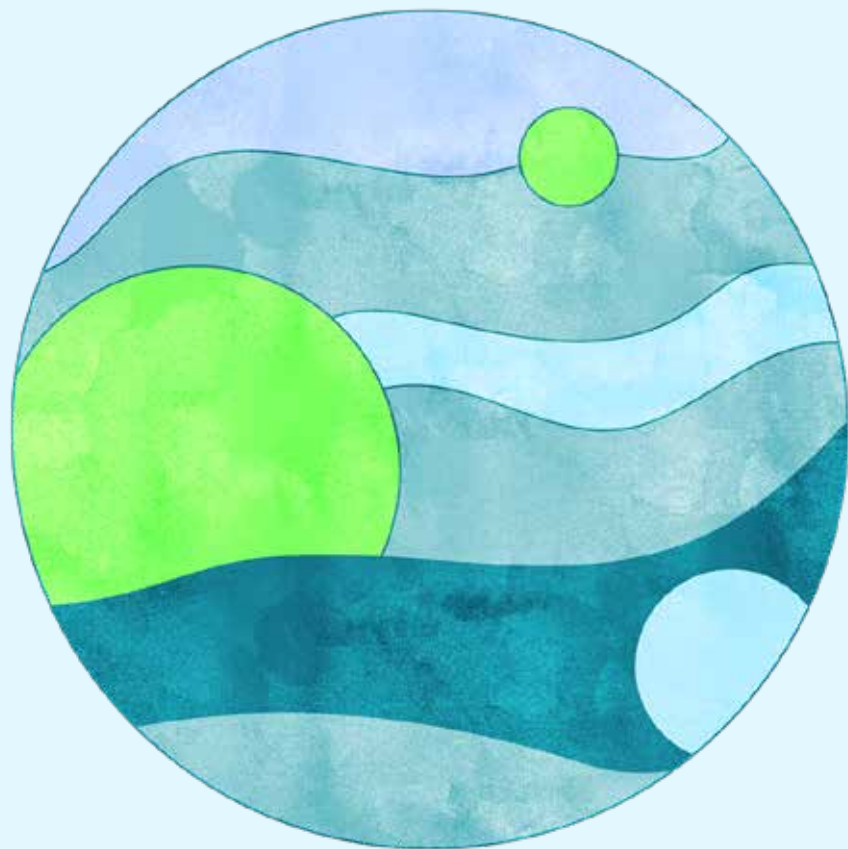
Keystone Postbiotic™ is produced through the fermentation of oats with two carefully selected *Lactiplantibacillus* and *Lacticaseibacillus* probiotic strains with the option to add grapeseed extract for enhanced microbiome and antioxidant benefits.



GRAS | Kosher Parve | Allergen-free



# Keystone Postbiotic™ delivers metabolites for foundational gut microbiome health



When we developed Keystone Postbiotic™, we identified the specific metabolites and desired mechanisms of action needed to support a healthy gut microbiome and improve digestive health.

We then determined the strains, grains, and botanicals that would together deliver the needed metabolites in the GI tract to:

- Support and regulate keystone gut bacteria
- Support intestinal epithelial health
- Support immune health



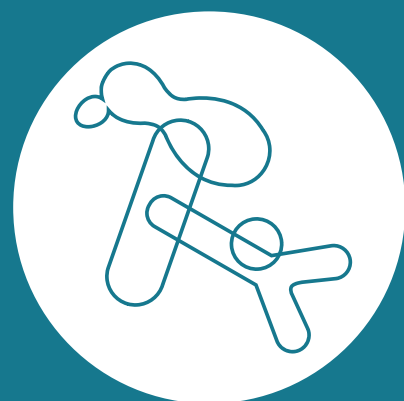
## TAKEAWAY

Since metabolites provide a functional health outcome, developing for metabolites helps deliver efficacy and consumer desired experience.



# High stability of postbiotics improves consumer accessibility

Our consumer gut health survey results found that when addressing symptoms such as gas, bloating, and stomach aches, most people turn to easy-to-access solutions such as drinking water (#1 choice) and walking (#2 choice) as solutions—antacids are a close third. Probiotics, on the other hand, are often a 5th or even 7th choice.



## TAKEAWAY

Biotic solutions need to be easy to access. Probiotics typically require a tablet or capsule dosage format, which decreases consumer accessibility and adoption. One can quickly get pill fatigue or forget their daily dose as it is not part of their typical food and beverage consumption.

## Keystone Postbiotic™

Verb's foundational gut microbiome health ingredient.



It's highly stable, making it easy to incorporate into functional foods and beverages that may not be suitable for live organisms.



# Formulate with a wider range of possibilities

Did we mention Keystone Postbiotic™ maintains viability, stability, and efficacy in a wide range of food and beverage product formats? This enables a broader range of product innovation and applications in functional foods and beverages.



## FOOD AND BEVERAGE APPLICATIONS

Opportunity: Keystone Postbiotic™ is shelf and process-stable.

### IT CAN BE ADDED TO:

- bars
- cereals
- cookies
- crackers
- chocolate
- juice
- sodas
- creamers
- sports drinks
- protein shakes
- powders, and more

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**Labeling:** Fermented oats

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**Recommended Dose:** 300mg/serving

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# Add Verb in your products

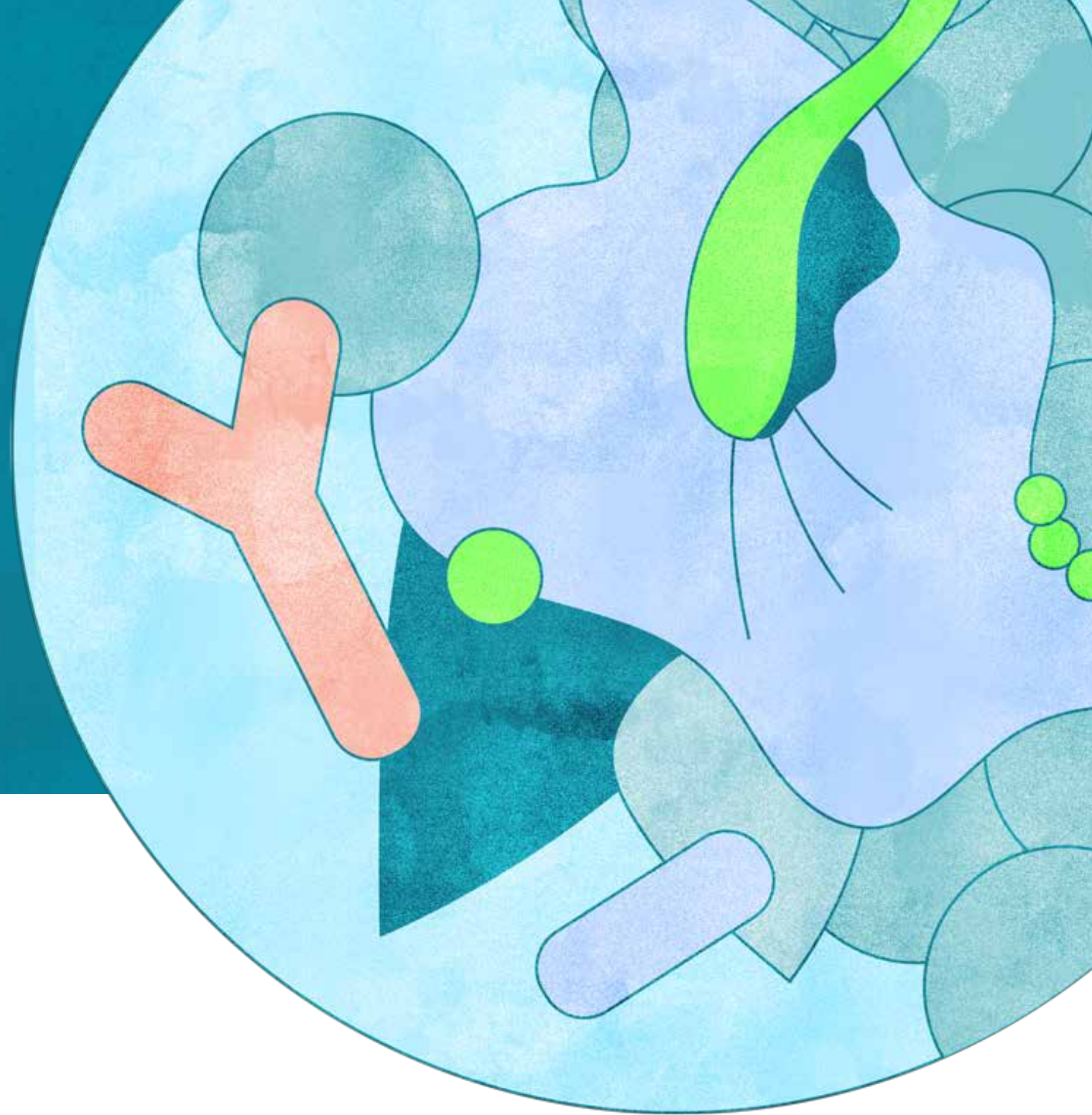
Partner with us and see how our Keystone Postbiotic™ shelf-stable biotic ingredient can expand your functional food and beverage products.



Let's Talk

**verb biotics™**

Science Minds.  
Working for Humankind.



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# Sources

1. Salminen et al., The International Scientific Association of Probiotics and Prebiotics (ISAPP) consensus statement on the definition and scope of postbiotics, 2021.
2. Hill et al., Expert consensus document. The International Scientific Association for Probiotics and Prebiotics (ISAPP) consensus statement on the scope and appropriate use of the term probiotic, 2014.
3. Gibson et al., Expert consensus document: The International Scientific Association for Probiotics and Prebiotics (ISAPP) consensus statement on the definition and scope of prebiotics, 2017.

