Polyphenol Infusions to Improve Gastro-Intestinal Stability of Probiotics

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ABSTRACT

Researchers at the University of California, Davis have developed a method for improving probiotic resistance to conditions in the gastrointestinal tract by simultaneously delivering probiotics and extracts of fruit and vegetables rich in polyphenols which fight inflammation and improves health in the GI tract.

FULL DESCRIPTION

Probiotics, live microorganisms that provide health benefits when consumed, are increasingly linked to positive health outcomes, but they are highly sensitive to the acidic conditions of the upper gastrointestinal (GI) tract, especially when they need to be delivered to lower GI tract. To address this delivery obstacle, companies have been searching for methods of stabilizing probiotics by utilizing resistant strains, microencapsulation, and spray drying. As a natural and gut-friendly alternative, researchers at the University of California, Davis did a study on the synergism between probiotics and phenolic compounds or plant-based prebiotics.

After vacuum infusion of plant extracts rich in polyphenols, probiotics become more metabolically active, making probiotic encapsulation unnecessary to deliver high amounts of probiotic cells into the gut. The infusion of certain plant extracts also increases the probiotics' hydrophobicity, which may reduce oxidative stress or inhibits enzymatic activities, and increase their survivability. Additionally, probiotic cells infused with plants extracts were shown to enhanced tolerance against simulated gastrointestinal treatments without any change in their metabolic activity or antagonistic activity towards pathogens.

APPLICATIONS

- Useful to probiotic and food companies

FEATURES/BENEFITS

- Eliminates the need for probiotic encapsulation.
- Improve probiotic binding to gut wall and other microbial structures.
- Combines the co-delivery of plant-based prebiotics with probiotics.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	20240150705	05/09/2024	2021-627
Patent Cooperation Treaty	Published Application	WO 2023/003831	01/26/2023	2021-627

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

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OTHER INFORMATION

KEYWORDS

vacuum infusion, Lactobacillus, metabolic activity, polyphenols, vegetable extract

CATEGORIZED AS

- **Medical**
  - Delivery Systems

RELATED CASES

2021-627-0

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