



Postbiotics: An Emerging Area of Biotics Research

Postbiotics are a new class of biotics being researched for their various health benefits, including supporting gut barrier function, immunity, skin health, and reducing inflammation. Currently, the most common sources of postbiotics are supplements and infant formulas but the clinical evidence and scientific standards for reporting information on postbiotic-containing products is still emerging; product recommendations and dosing cannot yet be made at this time.^{1,2}

According to the **International Scientific Association for Probiotics and Prebiotics**, a postbiotic is defined as:

A "preparation of inanimate microorganisms and /or their components that confers a health benefit on the host."³

Where do postbiotics fit among the biotics?

Prebiotics

Food components that the human body cannot digest but feed the helpful bacteria in the gut to promote their growth and function⁴



Probiotics

Living microorganisms in our gut, like helpful bacteria, that contribute to a healthy digestive system and provide a health benefit⁵

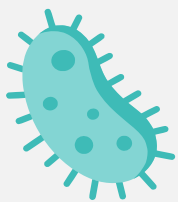


Postbiotics

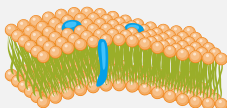
Microbial cells, such as bacteria, that have been **deliberately inactivated**, and/or their cellular components with or without metabolites, that provide a health benefit^{1,2}



Postbiotic Components



Always contains inactive microbial cells, either whole cells or in parts (e.g., cell membranes)



May contain other metabolites like vitamins



Postbiotic Example⁶



Infant formula fermented with heat inactivated postbiotics (*Bifidobacterium breve* c50 and *Streptococcus thermophilus* 065)

Health benefit: reduced severity of acute diarrhea in healthy infants

Postbiotics Definition Breakdown^{1,2}:

- **Microbial cells**, such as bacteria, **from whole cells or in parts** (e.g., cell walls or membranes), that have been deliberately inactivated by some form of technology such as heat, radiation, or high pressure
 - **Note:** the microbial cells may be a probiotic before they're inactivated but not *always*
- **May or may not contain metabolites** produced by the microbial cells during fermentation, such as vitamins
 - **Note:** metabolites without the microbial cell are *not* postbiotics
- **Provide a health benefit** to the host, such as humans or animals, as demonstrated through well-designed clinical trials

Think of postbiotics as what is present **AFTER (post)** a microbial cell, such as bacteria, is inactivated (i.e., dies) that provides a health benefit.

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