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# Function of *Akkermansia muciniphila* in type 2 diabetes and related diseases

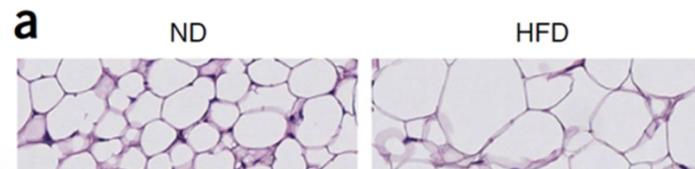
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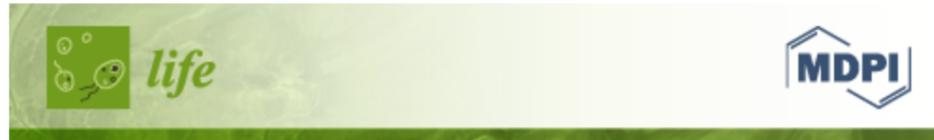
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The prevalence of type 2 diabetes (T2D) is increasing worldwide, with many patients developing long-term complications that affect their cardiovascular, urinary, alimentary, and other systems. A growing body of literature has reported the crucial role of gut microbiota in metabolic diseases, one of which, *Akkermansia muciniphila*, is considered the “next-generation probiotic” for alleviating metabolic disorders and the inflammatory response. Although extensive research has been conducted on *A. muciniphila*, none has summarized its regulation in T2D. Hence,

# New insights into how *Akkermansia muciniphila* improves metabolic health, leading to first human safety trial

Previous studies have identified *Akkermansia muciniphila* as an important bacterium in metabolic health—able to prevent the development of obesity in animal models. Until now, however, its mechanisms were unclear and its effects had never been tested in humans.





▶ [Life \(Basel\)](#). 2023 May 24;13(6):1247. doi: [10.3390/life13061247](https://doi.org/10.3390/life13061247) [↗](#)

## **A Critical Perspective on the Supplementation of *Akkermansia muciniphila*: Benefits and Harms**

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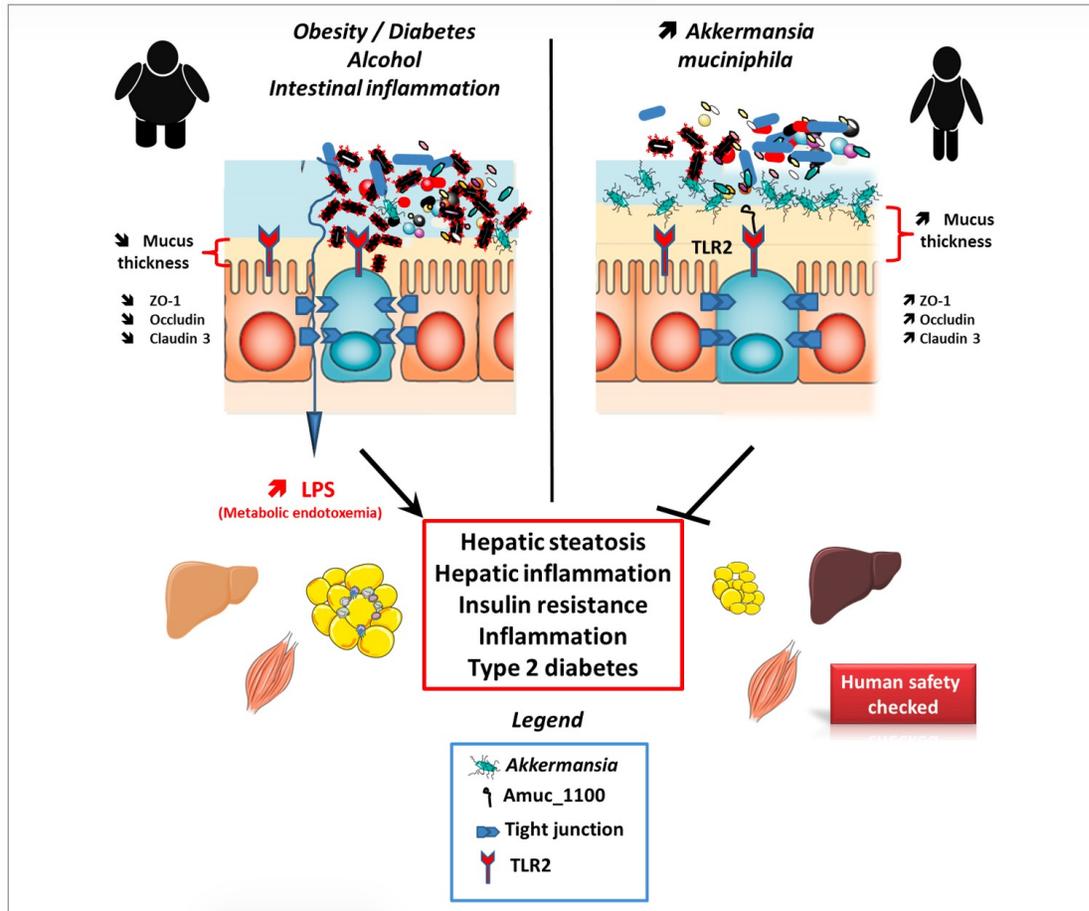
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### Abstract

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Pasteurized *Akkermansia muciniphila* (PAM) is a next-generation postbiotic shown to improve metabolic health, insulin sensitivity, and gut barrier function, often with greater efficacy than its live counterpart. Proven safe for human consumption, it aids in reducing cholesterol and fat mass, making it a promising tool for managing obesity and type 2 diabetes

## Key Health Benefits of Pasteurized *Akkermansia*

- **Improved Metabolic Health:** Studies indicate that PAM significantly improves insulin sensitivity, reduces insulinemia, and lowers plasma total cholesterol.
- **Weight & Fat Loss:** Pasteurized *Akkermansia* helps decrease fat mass and circumference, promoting better weight management.
- **Stronger Gut Barrier:** It enhances gut barrier function, which can help reduce metabolic endotoxemia and inflammation.
- **Anti-inflammatory Effects:** It reduces inflammation associated with obesity and metabolic syndrome.
- **Superior to Live Form:** Research suggests that pasteurization can actually enhance the beneficial, metabolic-improving effects of the bacteria.

## Mechanism of Action

- Pasteurized Akkermansia acts by reducing fat accumulation through the activation of fatty acid -oxidation (fat-burning) pathways.
- It also mimics certain effects of metabolic medicines, such as GLP-1 stimulation, which assists in glucose metabolism and appetite regulation.

## Current Research

- Clinical Trials: Human trials have demonstrated that oral administration of pasteurized Akkermansia is safe and effective.
- Ongoing Studies: Research is exploring its ability to improve immune function and reduce the impacts of stress on the body.