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BRIDGING THE GAP BETWEEN PREBIOTIC RESEARCH AND REAL-WORLD CLINICAL APPLICATIONS

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Dear Editor,

We read with great interest the article by Veljković et al[1] on the role of established and emerging prebiotics in shaping the gut microbiota. While the review is comprehensive, several points warrant further discussion to enhance its applicability in practical settings.

First, although the authors have summarized extensive preclinical data, the clinical applicability of these findings remains uncertain. Randomized trials have shown that habitual fiber intake significantly influences the microbiota response to prebiotics, demonstrating substantial interindividual variability[2].

Second, polyphenol-type prebiotics are discussed, yet their low bioavailability and metabolism by only select gut microbes raise questions regarding their dosage and efficacy[3].

Third, although emerging prebiotics are presumed to be safe, their long-term safety in humans is not well characterized. Regulatory frameworks for prebiotics, particularly in Europe and elsewhere, remain inconsistent, as only certain compounds have well-established safety profiles and guidelines[4].

Fourth, the review largely focuses on individual prebiotics, yet synbiotic interventions using combined prebiotics may exhibit additive or antagonistic effects[5].

Fifth, although microbial shifts are discussed in terms of SCFA production, key species such as Faecalibacterium prausnitzii respond selectively to specific substrates such as gluconic acid containing oligosaccharides, suggesting a need for more precise taxonomic reporting[6].

Sixth, baseline microbiota composition and habitual diet appear to influence the clinical response to prebiotics, highlighting the potential for personalized nutrition strategies to enhance efficacy by accounting for microbial diversity[7].

Finally, future trials should incorporate clinical endpoints, integrate metabolomics or metagenomics, and assess the efficacy of mixed diets to reflect real-world conditions[8].

We commend the authors for addressing this rapidly evolving field and believe these considerations will further bridge the gap between experimental research and clinical application.

Conflict of Interest

The authors declare no conflicts of interest.

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Disclosure of AI Use

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