

Special Issue

Impacts of Diet-Gut Microbiota Interactions on Health

Message from the Guest Editors

Diet represents a primary environmental factor shaping the composition, diversity, and functional capacity of the gut microbiota, which in turn exerts profound regulatory effects on host health. This review summarizes the bidirectional interactions between dietary patterns and gut microbial communities, emphasizing how macronutrients and bioactive compounds modulate microbial taxonomic profiles and metabolic outputs. Key mechanisms include the production of short-chain fatty acids, the regulation of intestinal barrier integrity, and crosstalk with the gut-brain axis, which collectively influence metabolic, immunological, and neurological health outcomes. Dysregulation of diet-microbiota interactions is implicated in the pathogenesis of chronic diseases such as obesity, type 2 diabetes, and inflammatory bowel disease. Understanding these complex relationships provides critical insights for developing dietary strategies, functional foods, and microbiota-targeted interventions to promote host health and prevent diet-related disorders. Future research should focus on personalized nutrition approaches tailored to individual microbial signatures for precision health management.

Guest Editors

Dr. Peng Du

Key Laboratory of Dairy Science, Ministry of Education, College of Food Science, Northeast Agricultural University, Harbin 150030, China

Prof. Dr. Aili Li

Key Laboratory of Dairy Science, Ministry of Education, College of Food Science, Northeast Agricultural University, Harbin 150030, China

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
foods@mdpi.com

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Message from the Editor-in-Chief

Foods (ISSN 2304-8158) is an open access and peer reviewed scientific journal that publishes original articles, critical reviews, case reports, and short communications on food science. Articles are released monthly online, with unlimited free access. Currently, *Foods* has been indexed by the Science Citation Index Expanded (SCIE - Web of Science), PubMed, and Scopus. Our aim is to encourage scientists, researchers, and other food professionals to publish their experimental and theoretical results as much detail as possible. We therefore invite you to be one of our authors, and in doing so share your important research findings with the global food science community.

Editor-in-Chief

Prof. Dr. Arun K. Bhunia

1. Department of Food Science, Purdue University, West Lafayette, IN 47907, USA

2. Department of Comparative Pathobiology, Purdue University, West Lafayette, IN 47907, USA

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