

Special Issue

Integrating Multi-Omics Microbiome Research into the One Health Approach: Probiotics, Functional Foods, and Farm-to-Fork Concept

Message from the Guest Editors

Chronic diseases are increasingly linked to gut microbiota dysbiosis, spanning conditions such as diabetes, obesity, Crohn's disease, and even depression or autism. Poor dietary habits and low-quality foods contribute to this trend, while growing research underscores the role of gut health. Though the idea of supporting gut function through beneficial microbes dates back to the 19th century, modern science now enables purposeful use of probiotics, prebiotics, and symbiotics to manage these disorders. Functional foods—rich in probiotics, fiber, polyphenols, and bioactives—support digestive and systemic health within a sustainable farm-to-fork model. This Special Issue focuses on the integration of multi-omics tools (genomics, metabolomics, microbiomics, etc.) within the One Health framework, which promotes the balance of human, animal, and environmental health. We welcome studies that explore nutrition, sustainable food systems, and microbiome modulation to advance innovative, holistic approaches to global health challenges.

Guest Editors

Dr. Anna Kostka

Department of Environmental Protection, Faculty of Geology, Geophysics and Environmental Protection, AGH University of Science and Technology, Al. Mickiewicza 30, 30-059 Kraków, Poland

Dr. Ana López Moreno

Department of Microbiology, Faculty of Pharmacy, University of Granada, Campus of Cartuja, 18071 Granada, Spain

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Applied Sciences
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

Editor-in-Chief

Prof. Dr. Giulio Nicola Cerullo
Dipartimento di Fisica, Politecnico di Milano, Piazza L. da Vinci 32,
20133 Milano, Italy

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