Special Issue

Effects of Diet and Nutrition on Gut Microbiota

Message from the Guest Editors

The gut microbiota, often termed the "second genome", critically influences the pathogenesis of metabolic diseases through metabolite exchange, immune modulation, and neuroendocrine signaling. Emerging evidence highlights that dietary patterns and specific nutrients can reshape microbial communities to improve host health. This Special Issue prioritizes the molecular mechanisms and clinical translation of diet–microbiota–host interactions, with a focus on the following:

- Dynamic microbiota–metabolite mapping during disease progression and therapeutic target validation.
- Building machine learning models that leverage gut microbiota signatures to predict risks of hypertension, hyperlipidemia, and hyperglycemia.
- Multi-omics integration in precision nutrition strategies.
- Clinical translation of functional foods for metabolic disorders.

We welcome original research, reviews, and methodological papers from microbiology, nutrition, and clinical medicine to advance microbiota-guided precision nutrition. Submissions addressing mechanistic insights, clinical validation, or scalable interventions are particularly encouraged.

Guest Editors

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About the Journal

Message from the Editor-in-Chief

"Microorganism" merges the idea of the very small with the idea of the evolving reproducing organism is a unifying principle for the discipline of microbiology. Our journal recognizes the broadly diverse yet connected nature of microorganisms and provides an advanced publishing forum for original articles from scientists involved in high-quality basic and applied research on any prokaryotic or eukaryotic microorganism, and for research on the ecology, genomics and evolution of microbial communities as well as that exploring cultured microorganisms in the laboratory.

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