Special Issue

Diet, Microbiome, and Immune Function

Message from the Guest Editor

The intricate relationship between the microbiome, diet, and immune function is increasingly recognized as central to human health and disease. Diet profoundly shapes microbial composition and diversity, which in turn influences nutrient metabolism and immune regulation. Immunometabolic pathways directly link diet and immune function, with subsequent consequences for microbial colonization and function. Emerging evidence links dysbiosis and poor dietary patterns to chronic inflammation, metabolic disorders, autoimmunity, and allergy. In contrast, diverse, fiber-rich, and plant-based diets can enhance microbial resilience and support immune health. However, the full complexity of this diet-microbiome-immune axis requires further exploration. This Special Issue aims to advance our understanding of the diet–microbiome–immunity axis, encompassing both mechanistic insights and translational and clinical applications, providing a foundation for innovative strategies to harness diet and the microbiome to promote immune resilience and disease prevention.

Guest Editor

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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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