

Special Issue

Interactions Between Gut Microbiota and Epigenetic Markers in Health and Disease

Message from the Guest Editor

Environmental factors such as microbes, diet, and pharmaceuticals significantly influence the development and progression of various diseases, including cancers, neuropsychiatric, cardiovascular, metabolic, autoimmune, and inflammatory disorders. These complex conditions result from dynamic interactions among the gut microbiota, their metabolites, host genetics, epigenetic regulation, and immune responses. Epigenetic modifications—such as DNA methylation, histone modification, and non-coding RNA regulation—govern key cellular processes like proliferation, apoptosis, inflammation, and immune function, thereby shaping disease onset and progression. Recent evidence highlights that microbiota-derived metabolites, particularly short-chain fatty acids, can modulate epigenetic mechanisms by inhibiting histone deacetylases and altering DNA methylation, ultimately influencing gene expression and critical physiological processes such as immune regulation, mucosal integrity, metabolism, and organ function. This Special Issue of *Cells* focuses on recent advances in elucidating the interplay between intestinal microbiota and epigenetic regulation in disease pathogenesis and therapy.

Guest Editor

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About the Journal

Message from the Editorial Board

Cells has become a solid international scientific journal that is now indexed on SCIE and in other databases. We have successfully introduced a special issues format so that these issues serve as mini-forums in specific areas of cell science. *Cells* encourages researchers to suggest new special issues, serve as special issues editors, and volunteer to be reviewers. Our main focus will remain on cell anatomy and physiology, the structure and function of organelles, cell adhesion and motility, and the regulation of intracellular signaling, growth, differentiation, and aging. We are open to both original research papers and reviews.

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