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Disease Markers

Special Issue on

The Microbiome as a Marker for Human Diseases

CALL FOR PAPERS

It has been known for a long time that the microbiota protects the human body from infections; however whether some components of the microbiota are more protective than others and how the microbiota interacts with pathogens are unknown. On the other hand, the human body is flooded with microbial substances originating in the microbiota; some of these compounds have physiological effects in cells of the nervous, gastrointestinal, immune, and other systems. In recent years it has become increasingly clear that the human microbiome has a far-reaching impact on human physiology and is now considered by some authors a metabolically active endogenous "organ." The human microbiome seems to influence the well-being of the host by contributing to its nutrition, metabolism, physiology, and immune function.

Disturbances of normal human microbiome are currently analyzed in relationship to the pathogenesis of several human diseases, such as obesity, insulin resistance and diabetes, inflammatory bowel disease, liver cirrhosis, psychiatric conditions, and cardiovascular disease.

However, the complex relationship between human and microbial cells is difficult to analyze; in several occasions whether the microbiota configuration is causing physiological changes or the physiological changes alter the microbiota configuration is difficult to establish. Further complications arise from the fluid nature of microbial genomes, which are constantly subjected to horizontal gene transfer and deletion.

Can the microbiome be used as a marker for some human diseases? The answer to this question is the challenge that we are launching for discussion within the scientific community.

In this special issue we invite authors to contribute with high quality original research articles as well as review articles aiming to clarify this question. We call on experts in different fields such as microbiology, immunology, and infectious diseases, physiologists, endocrinologists, psychologists, experts in complex animal microbiomes such as ruminants, and experts in holobionts and other microbial associations.

Potential topics include, but are not limited to:

- Human colonizing microorganisms as disease markers
- Gut dysbiosis in different human pathologies
- Changes in human microbiome of skin, eyes, and mucosae (nose, oral, vaginal, etc.) in human diseases
- Profiling microbiome changes in different human diseases giving focus to distinct microbial populations of bacteria, fungi, viruses, and protozoa
- New tools proposed for finding "microbiological" markers for human disease
- Molecular markers for characterization of microbial communities
- Models for understanding microbial populations
- Microbiome in experimental models

Authors can submit their manuscripts via the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/dm/mmhd/.

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