



Special Issue on
Interactions of the Human Microbiome and Immune System in Health Resilience and Disease Pathogenesis

CALL FOR PAPERS

The human microbiome refers to the collection of microorganisms, including their genomes, which reside in different parts of human body such as skin, conjunctivae, oral cavity, respiratory, gut, and the urogenital tract. The microbiome is known to contribute to the maintenance of health and it is now increasingly clear, with the help of genomics that alterations in the balance between host and human microbiome may result in life threatening health complications. Healthy individuals possess a strong immune system that is comprised of both natural and acquired immunity together with native microbiota. Any disruption to this complex ecosystem due to a weakened immune system (e.g., people with AIDS or cancer, those taking corticosteroids, and those receiving chemotherapy) or dietary habits or by antimicrobials may result in increased risk of infectious diseases due to viruses, bacteria, fungi, and protozoa ultimately leading to severe health complications.

Microbes colonizing and/or infecting chronic wounds undoubtedly play a major and interactive role in impaired healing, especially in amplifying and perpetuating the host innate immune response. Commensal microbiota, host innate immunity, and genetics form a multidimensional network that controls homeostasis of the human epithelial barriers. Converging evidence suggests that alterations in the regulation of the complex host environment (e.g., dysbiosis and overgrowth of select commensal bacterial species, dietary factors, copresence of facultative pathogens (including viruses), and changes in mucus characteristics) may trigger aberrant innate immune signaling, thereby contributing to the development of intestinal inflammation and associated colon cancer in the susceptible individual. Genetically determined innate immune malfunction may create an inflammatory environment that promotes tumor progression (such as the TLR4-D299G mutation).

Here, we invite researchers to contribute original research as well as review articles that investigate the multidimensional network of the human microbiome and host immune system (including epithelial barriers) in the maintenance of health as well as disease pathogenesis.

Potential topics include, but are not limited to:

- ▶ Human microbiome (species diversity, resilience to perturbations, and/or functional properties) and the interaction(s) with the host and the immune system
- ▶ Impact of aging on the epithelium and immune system of the host
- ▶ “Cross talk” between the human microbiome and the immune system in health resilience or disease pathogenesis
- ▶ Resident microbiota composition and function in people with compromised immune systems
- ▶ Manipulation of the microbiome and impact on the immune system to achieve health and wellness
- ▶ Alternative therapeutic approaches with microbiota transplantation and interaction with the mucosal immune system
- ▶ Vaccine responses and the microbiome

Authors can submit their manuscripts via the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/jir/hmis/>.

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