Mediators of Inflammation

Hindawi

Special Issue on

The Microbiota and Immune System Crosstalk in Health and Disease

CALL FOR PAPERS

In the past decades, noncommunicable diseases have surpassed infectious diseases as the principal cause of disease and death in the world. Trillions of commensal microbes live in and on our body and constitute the human microbiome. Microbes reside in the gut, where they perform functions essential to our global health, including food intake and digestion, lipid accumulation, lipopolysaccharide content, insulin signaling, drug activation and metabolism, production of pleotropic dietary intermediates (short-chain fatty acids), and generation of anti-inflammatory mediators.

The gut microbiota plays critical physiological roles in the control of local or systemic immune responses to foreign or self-antigens and as such has become an increasingly important factor in the susceptibility to chronic inflammatory disorders, autoimmunity and infections, or effectiveness of various therapies. Disturbances in the gut microbiota are also involved in the pathogenesis of other various diseases in humans including metabolic disorders, cancer, psychological behaviours, gastrointestinal infections, inflammatory bowel diseases, systemic and organ-related autoimmune disorders such as type 1 diabetes (T1D), and multiple sclerosis (MS).

Several evidences show that xenobiotics can positively modulate the complex inflammatory pathways at the site of gut mucosa, acting as anti-inflammatory agents. Xenobiotics may interfere with mucosal immune components, leading to an activation of anti-inflammatory pathways and inhibition of several mediators of inflammation. Studying the complex interplay between gut immunological components and xenobiotics will open new horizons in the knowledge and therapy of the inflammatory pathologies.

The nature of the microorganisms, their components, or metabolites that alter biological processes within and beyond the gut environment still remain ill-defined. Several strategies have been developed to change gut microbiota such as prebiotics, probiotics, or fecal microbiota transplantation, which have diverse effects on the body's immune system and metabolism and turn on the development of disease.

The purpose of this special issue is to publish high-quality research articles as well as reviews that will stimulate the continuing efforts to understand the interactions between immunity and microbiota in health homeostasis and human pathologies.

Potential topics include but are not limited to the following:

- Impact of xenobiotics and diet on the microbiota
- Inflammatory disorders of various systems (e.g., intestine/gut, liver, and brain)
- Autoimmune diseases (e.g., type 1 diabetes)
- Opportunistic infections (e.g., clostridium difficile)
- Immunosenescence
- Obesity, metabolic syndrome, and type 2 diabetes

Authors can submit their manuscripts through the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/mi/tmis/.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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