

The Microbiome and Immunity

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To understand the concept of the Microbiome, is to recognize the important cellular players in gut tolerance and to understand the immunomodulatory effects of microbiota on the mucosal immune system.

A Microbiota is “the ecological community of commensal, symbiotic and pathogenic microorganisms that literally share our body space”.

The Human Microbiome (all of our microbes’ genes) can be considered a counterpart to the human genome (all of our genes). The genes in our microbiome outnumber the genes in our genome.

The gastrointestinal tract is a mucosal surface constantly exposed to foreign antigens and microbes, and is protected by a vast array of immunologically active structures and cells.

In the lamina propria dendritic cells play a large role in determining whether the response to a particular antigen will be inflammatory or anti-inflammatory. The intestinal microbiome, as a whole community, exerts a profound influence on mucosal immune regulation.

A breakdown or dysregulation of immune tolerance in the host will result in unwanted inflammatory immune responses against innocuous antigens, resulting in allergic, inflammatory or infectious diseases.

Maintenance of immune tolerance is critical in protection against allergic and autoimmune diseases.

Microbiota play this role. The immunomodulatory effects of commensal species, represents an attractive approach for developing novel therapeutics for the treatment of allergic diseases.

The microbiome provides numerous nutritional benefits to the host, including synthesizing vitamins and short chain-fatty acids (SCFAs).

It is important for the development and functionality of the intestinal immune system through many ways, dendritic cells, toll receptors and other reactions in the lamina propria which they play a part.

It has been suggested that a healthy microbiota exists when there is a balance between symbionts, commensal organisms, and pathogens (dormant bad bacteria).

Alterations in this balance can lead to dysbiosis, which has been implicated in numerous pathologies, including inflammatory bowel diseases, infection and atopy [1,2].

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Bibliography

1. Mac Dermott., *et al.* "The microbiome and regulation of mucosal immunity". *Immunology* 142.1 (2014): 24-31.
2. Kamada N., *et al.* "Role of the gut microbiota in immunity and inflammatory disease". *Nature Reviews Immunology* 13 (2013): 321.

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