D-MEM
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EXPERIMENTAL
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BIOMETRA
DIPARTIMENTO DI BIOTECNOLOGIE MEDICHE E MEDICINA TRASLAZIONALE

D-MEM SEMINAR

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Aula C, LITA

BACTERIAL REGULATION OF SECRETORY IgA IN HOST MICROBIOTA MUTUALISM

The human gastrointestinal (GI) tract is a complex ecological niche, in which all the three domains of life (Archaea, Bacteria and Eukarya) and Viruses co-exist in close association with the host. This complex microbial community, referred to as the gut microbiota, has co-evolved with the host in a mutualistic relationship that influences many physiological functions. The equilibrium between the gut microbiota and the host is a key element in human health. In fact, alterations in the microbial community structure, termed dysbiosis, are associated to an increasing number of medical conditions. Co-evolution of the immune system and the gut microbiota results in the colonization of the GI niche by mutualistic or symbiotic microorganisms. Luminal secretion of immunoglobulin A (IgA) guarantees mucosal protection by neutralizing invading pathogens and microbial inflammatory compounds as well as the selection of beneficial microbes. The seminar will show data on the purinergic regulation of the adaptive secretory IgA response by ATP released by the microbiota and the implications of this regulatory mechanism in the physiology and pathophysiology of the gut ecosystem.