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Human intestinal dendritic cell and macrophage subsets in coeliac disease

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Abstract

Dendritic cells (DC) and macrophages (M ϕ) constitute the most abundant antigen presenting cells in the human intestinal mucosa. In resting conditions, they are essential to maintain the mechanisms of immune tolerance toward food antigens and commensals, at the time that they keep the capacity to initiate and maintain antigen-specific pro-inflammatory immune responses toward invading pathogens. Nevertheless, this delicate equilibrium between immunity and tolerance is not perfect, like in coeliac disease (CD), where DC and M ϕ drive the development of antigen-specific immune responses toward dietary gluten peptides. In this review, we provide therefore a comprehensive discussion about CD pathogenesis, the human intestinal immune system and the biology of intestinal DC and M ϕ both in resting conditions and in CD. Last, but not least, we discuss about all the remaining issues pending to be studied regarding DC and M ϕ contribution toward CD pathogenesis.

This may allow the identification of unique and specific factors which may be useful in the clinical practice, as well as identify new therapeutic targets in order to reestablish the loss intestinal homeostasis in CD.

Keywords: Coeliac disease; Dendritic cells; Human intestine; Macrophages; Mucosal immunology.

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