

Investigation in SCFA effect on function and plasticity of intestinal Dendritic Cells

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The gut immune system maintains a delicate equilibrium between tolerance towards gut commensals and food, and immune protection against possible pathogens. Cells residing in the Lamina Propria (LP) are responsible for both, innate and adaptive immunity and can tailor their responses based on what molecules they are exposed to. Short chain fatty acids (SCFA) are metabolites of commensal bacteria within the gut. Recent literature suggest SCFA might play a role in many physiological and molecular mechanisms in health and disease. As Dendritic cells (DCs) are responsible for antigen presentation and T cell priming, we have set out to investigate how SCFA can affect both, development and function of different DC subsets and the immune responses respective to them. Here we optimize previously unpublished *in-vitro* method for generating bone marrow (BM) derived gut-like DCs that can be used to study SCFA effect on the cells. Our preliminary data suggest that in the presence of butyrate CD11b expression is abolished on the BM derived DCs and cells develop to be more phenotypically similar to cDC1s found in the intestine. These results suggest that SCFAs are contributing towards maintenance of tolerance in the gut via altering DC development.