HOMING
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M.29. Dendritic Cell (DC) Imprinting of Homing Markers on Human T Cells is Modulated by Bacteria

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Background and Aims: Murine intestinal DC, producing all-trans retinoic acid (ATRA), induce T cell expression of 'gut-homing' α4β7 integrin and CCR9. Studies in germfree mice indicate that bacteria are not absolutely required for development of these properties, but may modulate homing receptor expression. Our aim was to determine if exposure to bacteria influences imprinting of homing receptors by human DC. Methods: DC were generated from CD14+ monocytes using GM-CSF and IL-4, with bacterial components added for the final 24 h of a 7 d culture. DC differentiation and maturation marker expression was assessed by flow cytometry. DC were used to stimulate allogeneic CFSE-labelled naïve CD4+ T-cells and homing marker expression on CFSE low responding T-cells determined by flow cytometry. Results: T-cell expression of β7 integrin was upregulated following activation in the presence of exogenous ATRA. Induction of β7 integrin in the absence of ATRA was blocked by the RAR antagonist LE135. T-cells stimulated by DC treated with Bifidobacterium longum, but not Lactobacillus acidophilus, displayed reduced expression of β7 integrin. Conclusions: As in mice, ATRA regulates expression of homing receptors by human T-cells. Bacteria modulate imprinting by DC, possibly contributing to the action of probiotic bacteria used in treatment of intestinal inflammation.