EPITHELIAL /T CELL INTERACTIONS
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M.63. *Bifodobacterium longum* Suppresses Costimulatory Molecules Expressions in Intestinal Epithelial Cells and Pro-inflammatory Cytokines Secretion from Splenocyte

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Aims: It has been suggested that instestinal epithelial cells (IECs) from patients with inflammatory bowel disease (IBD) express elevated levels of costimulatory molecules and that IECs stimulate CD4+ T cells to proliferate and secrete interferon (IFN)-γ. In this study, we evaluated the effects of *Bifidobacterium longum* subsp. *infantis* on pro-inflammatory cytokines secretion in inflamed IECs / splenocytes coclutures of mice. We also investigated whether *B. longum* regulates costimulatory molecules expressions in human epithelial HT-29 cells. Methods & Results**:** IECs from dextran sodium sulfate (DSS)-induced colitis mice or non-treated mice were cocultured with their splenocytes. Although IECs from colitis mice induced IFN-γ and IL-17 secretion from the splenocytes, this was suppressed by oral treatment with *B. longum*. In HT-29 cells, the mRNA expressions of costimulatory moleculars CD80 and B7h were induced by IFN-γ and TNF-α, respectively. These expressions were also suppressed by the addition of *B. longum* to the culture medium. This was associated with decreased level of phospho-p38. It was also demonstrated that IFN-γ induced the mRNA expressions of negative costimulatory moleculars B7-H1 and B7-DC, which was not affected by *B. longum*. Conclusions**:** *B. longum* suppressed costimulatory molecules expressions in IECs and pro-inflammatory cytokines secretion from splenocyte.

M.64. Dendritic Epidermal T Cells Promote Wound Healing by Production of Vascular Endothelial Growth Factor Mediated by HIF-1α Signaling

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Local hypoxia is general consequence of an acute skin wound due to vascular disruption and high oxygen consumption by cells at the edge of the wound. The resident γδ T cells in the skin, Dendritic Epidermal T Cells (DETC), are known to support local tissue homeostasis and wound repair by local production of growth factors, such as keratinocyte growth factors (KGFs) and insulin-like growth factor (IGF)-1. We have analyzed the functional role of DETC in response to local tissue hypoxia generated by an acute skin wound. The hypoxic status of the skin wound induced HIF-1α expression in DETC. HIF-1α signalling during hypoxia induced expression of vascular endothelial growth factor (VEGF) by DETC. Wound healing was impaired after HIF-1α gene-silencing in DETC and this impairment was rescued by VEGF administration. Together this data demonstrates that acute skin wound induces HIF-1α signaling in DETC, which promote VEGF production with the result of enhancing skin wound healing.

M.65. The Interaction of Carcinoembryonic Antigen Cell-adhesion Molecule Family Members with the Non-classical Class I Molecule CD1d and CD8

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CD8+ regulatory T (TrE) cells play a role in the regulation of mucosal immune homeostasis. gp180, a CEACAM family member, forms a complex with CD1d and interacts with CD8. In this study, we examined whether three CEACAM members expressed by IECs can associate with CD1d. Vectors expressing CEACAM1, CEACAM5, and CEACAM6 were co-transfected with a CD1d-expression vector. Cell lysates were subjected to co-immunoprecipitation with either B9 (anti-gp180) or D5 (anti-CD1d). A Jurkat T cell line overexpressing CD8α was used to absorb soluble CEACAM5 or CEACAM5 N-domain mutants N42D and N70,81A, the latter two associated with loss of B9 staining. Only CEACAM5 co-immunoprecipitated with CD1d. To determine which domain was responsible for its binding to CD1d, truncated CEACAM5 mutants were constructed. Deletion of the B3 domain obliterated the binding to CD1d. B9 can block the interaction between gp180 and CD8. Therefore, we measured the absorption of wild-type CEACAM5 and N42D and N70,81A mutants by Jurkat/CD8α. Jurkat/CD8α absorbed wild-type and N42D CEACAM5, but not the N70,81A mutant. These studies indicate that gp180/CEACAM5 interacts with CD1d and CD8 through different domains. Understanding the nature of the intermolecular interaction will help to identify the mechanism of activation of TrE cells.