

P034 Generation and analysis of mice with mutations in the β_7 -integrin gene

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β_7 -Integrins are exclusively expressed on lymphocytes. The β_7 subunit dimerizes with α_4 - or α_E -Integrins. $\alpha_4\beta_7$ -Integrin belongs to the homing-receptors because it is expressed on those lymphocytes which recirculate to the gut associated lymphoid tissue (GALT) to meet their specific antigen. Murine lymphocytes which express $\alpha_4\beta_7$ -Integrin show adherence to the high endothelial venules of the Peyer's patches. The major ligand of $\alpha_4\beta_7$ -Integrin is the mucosal addressin cell adhesion molecule-1 (MAdCAM-1) which is expressed on mucosal endothelial cells and cells of the spleen, further ligands are the vascular cell adhesion molecule-1 (VCAM-1) and fibronectin. The complete β_7 -Integrin knockout causes no systemic defects, only the homing of the lymphocytes to the Peyer's patches of the GALT and the formation of the GALT is impaired. To address the question whether only the presence of the β_7 -Integrin on the cell surface is sufficient to mediate the homing of the lymphocytes in the GALT, or whether specific inside-out signalling is required, we generated a set of four different mutations in the cytoplasmic domain of the β_7 -integrin. *In vivo* migration studies and *in vitro* adhesion assays will be performed to analyze these β_7 -Integrin mouse mutants.