

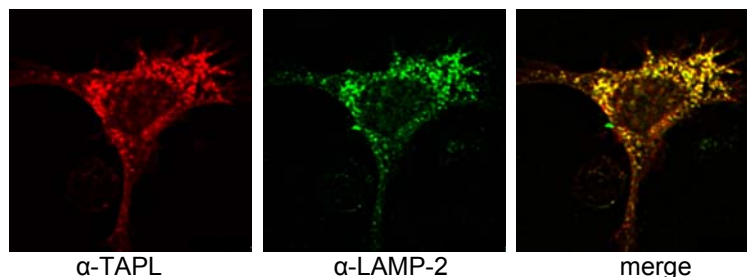
## IDENTIFICATION OF A LYSOSOMAL PEPTIDE TRANSPORT SYSTEM INDUCED DURING DENDRITIC CELL DEVELOPMENT

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An essential mechanism in the defense of pathogens and malignant cells by our immune system is the presentation of peptides on the cell surface. These peptides are degradation products of endogenous and exogenous proteins which are produced in the cytosol and the lysosomal compartment resembling the trash can of the cell. Subsequently, a part of these peptides is loaded onto major histocompatibility complex (MHC) class I or II receptors which present them on the cell surface for induction of an immune response. The loading of MHC class I molecules occurs in the endoplasmic reticulum and is dependent on the delivery of cytosolic peptides by the ABC transporter TAP. However, TAP independent translocation pathways have been proposed but not identified so far.



**Subcellular localization of TAP-like by immuno-fluorescence microscopy**

Herein, we could show in collaboration with scientist from the Paul-Ehrlich Institut, the university of Tübingen and Marburg that the ABC transporter TAP-like which shows a high sequence homology to TAP but differs in its peptide length specificity is strongly upregulated in professional antigen presenting cells. These cells are essential for the induction of an immune response and the elimination of auto-reactive lymphocytes. However, TAP-like is not involved in the MHC class I mediated antigen presentation. By microscopic and biochemical techniques, we localized TAP-like to the lysosomal compartment which is the place for MHC class II loading. Based on these findings, we suggest that TAP-like transports antigenic peptides into the lysosomes for MHC class II loading which could be an essential pathway for the elimination of auto-reactive T-lymphocytes.