**Generation of mice with inducible T cell-specific expression of Cre**

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Inducible Cre/loxP system represents an effective tool to study the role of specific gene in vivo, providing spatial (cell type specific) and temporal (inducible) control of gene expression at the same time. Here, we report the generation and characterization of a mouse mutant strain with inducible T cell-specific control of Cre, which we have developed to study the role of several genes (i.e.TCRa, NKG2D) in the activation and homeostasis of mature T cells in vivo. We used inducible CreER T2 system where the activity of CreER fusion protein can be induced by administration of tamoxifen.

We generated CD3e-CreERT2 mice by targeting CD3e locus in ES cells. T cell specificity and inducibility of Cre were provided by knocking of the CreERT2 cassette into the CD3e locus. We designed an appropriate targeting vector that was electroporated into the Bruce4 (C57BL6) embryonic stem (ES) cells. Upon the selection and screening procedure, we identified several ES cell clones positive for the homologous recombination. Selected ES clones were microinjected into mouse blastocysts and several chimeras were obtained that gave the germline transmission of the mutation. Flow cytometry analysis and Q-PCR of various lymphocyte population were used for the characterization of CD3e-CreERT2 mice.

In order to examine the efficiency of tamoxifen inducible Cre mediated deletion in T cells, we crossed CD3e-CreERT2 mice to TCRCafl mice, containing loxP flanked TCR Ca region. In this system, we showed conditional TCRa ablation on about 30% of CD4+ and CD8+ T cells mediated by Cre recombination upon tamoxifen administration. The specificity of Cre expression and quantification of Cre mediated deletion in different cell types and tissues were determined by quantitative PCR method.

Here we report generation and characterisation of mice with T cell specific and inducible control of Cre. We determined specific tamoxifen inducible Cre mediated deletion in T cells and showed deletion on about 30%.