ImmunoTools IT-Box-Cy55M-Award 2013

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The role of BATF in the generation of effector and regulatory T-cell responses during *Asthma bronchiale*

BATF (*basic leucine zipper transcription factor, ATF-like*) belongs to the AP-1 subfamily of transcription factors. It is highly expressed in cells of the hematopoietic system, especially in T- and B-cells. BATF is induced by IL-6 and directly influences the differentiation of $CD4^+$ T-cells into follicular T-helper cells (Tfh) and Th17 cells. Moreover, BATF is involved in the class-switching of immunoglobulins.

Th17 cells, as well as Th2 and Th9 cells, contribute to the pathogenicity of *Asthma bronchiale*. In allergic asthma, allergen-specific IgE antibodies also add to the development of the disease.

In this project we want to analyze whether BATF is differentially expressed and/or regulated in $CD4^+$ effector-, as well as regulatory-T-cell subsets in the context of *Asthma bronchiale*.

Using a murine model of allergic asthma, we want to examine different T-cell subsets, e. g. Th1, Th2 and Treg cells, in wild type and BATF-deficient mice. Furthermore we want to use naïve $CD4^+CD62L^+$ T-cells from $BATF^{+/+}$ and $BATF^{-/-}$ mice to *in vitro* differentiate those cells into various $CD4^+$ T-helper subsets. For this approach we need to stimulate the cells with different cytokine cocktails to create the appropriate milieu for the differentiation. Here we could use the cytokines provided in the *IT-Box-Cy55M.*

ImmunoTools *IT-Box-Cy55M* for **Nina Sopel**
includes 55 recombinant mouse cytokines

rm EGF, rm Eotaxin / CCL11, rm FGF-a / FGF-1, rm FGF-b / FGF-2, rm FGF-8, rm Flt3L / CD135, rm G-CSF, rm GM-CSF, rm GRO-a / CXCL1, rm GRO-b / CXCL2, rm IFNgamma, rm IL-1alpha, rm IL-1beta, rm IL-2, rmIL-3, rm IL-4, rm IL-5, rm IL-6, rm IL-7, rm IL-9, rm IL-10, rm IL-11, rm IL-13, rm IL-15, rm IL-16, rm IL-17A, rm IL-17C, rm IL-17F, rm IL-19, rm IL-20, rm IL-21, rm IL-22, rm IL-25 / IL-17E, rm IL-27, rm IL-31, rm IL-33, rm IP-10 / CXCL10, rm LIF, rm MCP1 / CCL2, rm M-CSF, rm MIP-1α/ CCL3, rm MIP-1β / CCL4, rm MIP3α / CCL20, rm MIP3β / CCL19, rm NGF-beta, rm PDGF-AA, rm PDGF-BB, rm RANTES / CCL5, rm sCD40L / CD154, rm SCF, rm SDF-1α / CXCL12a, rm SDF-1β / CXCL12b, rm TNFα, rm TPO, rm VEGF DETAILS

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