

# ImmunoTools IT-Box-139 Award 2012



**Sebastian Fuchs**

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## Phenotypical and functional characterization of T and NK cells in patients with combined immunodeficiency

Combined immunodeficiencies (CID) are a group of rare, monogenetic disorders of the human immune system, characterized by frequent and often severe infections and manifestations of immune dysregulation and autoimmunity. The diseases are caused by defective or reduced development or function of T cells with variable affection also of B and/or NK cells. The underlying molecular mechanisms are various and often unknown. Besides well described defects in DNA repair, cell metabolism or recombination of the T or B cell receptors, an increasing number of defects in the signaling pathways of B and T cells were described in the last few years.

We are part of an international study group investigating patients with CID. Therefore we have access to various patients with different genetic defects. We focus on the analysis of phenotype and function as well as signalling processes of T, B and NK cells in these patients. Furthermore, we aim to develop new diagnostic tests which can more specifically identify patients with particular genetic defects.

We will use the **ImmunoTools** IT-Box-139 to expand our lymphocyte phenotyping panel in patients with CID. Furthermore, antibodies will be used for extended analyses of T cell function via determination of surface markers, apoptosis induction and cytokine secretion. These tests will be important as diagnostic tools in CID and help to narrow down the spectrum of potential molecular defects prior genetic analysis.

### **ImmunoTools** IT-Box-139 for Sebastian Fuchs includes 100 antibodies

**FITC** - conjugated anti-human CD1a, CD3, CD4, CD5, CD6, CD7, CD8, CD14, CD15, CD16, CD19, CD21, CD25, CD29, CD35, CD36, CD41a, CD42b, CD45, CD45RA, CD45RB, CD45RO, CD49d, CD53, CD57, CD61, CD63, CD80, CD86, HLA-DR, IL-6, Control-IgG1, Control-IgG2a, Control-IgG2b, Annexin V

**PE** - conjugated anti-human CD3, CD4, CD8, CD11b, CD15, CD14, CD18, CD19, CD20, CD21, CD22, CD31, CD33, CD38, CD40, CD45, CD45RB, CD50, CD52, CD56, CD58, CD62p, CD72, CD95, CD105, CD147, CD177, CD235a, HLA-ABC, IL-6, Control-IgG1, Control-IgG2a, Control-IgG2b, Annexin V

**PE/Dy647** -tandem conjugated anti-human CD3, CD4, CD8, CD14, CD19, CD20, CD25, CD54

**APC** -conjugated anti-human CD2, CD3, CD4, CD8, CD10, CD11a, CD11c, CD14, CD16, CD27, CD37, CD42b, CD44, CD45, CD59, CD62L, CD69, CD71, IL-6, Control-IgG1, Control-IgG2a, Control-IgG2b, Annexin V

[DETAILS](#)