

ImmunoTools IT-Box-139 Award 2012



Nicole Mende

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How Cell Cycle Timing influences Self-Renewal Divisions and Stem Cell Maintenance of Human Hematopoietic Stem Cells

My PhD thesis aims to understand the regulation of hematopoietic stem cell (HSC) maintenance *in vivo*. I will study how self-renewal and differentiation of human HSCs is influenced by changes in cell cycle timing. So far I generated lentiviral vectors for overexpression of cell cycle regulators and established the transduction protocol for human HSCs. To see how HSCs that are manipulated in cell cycle timing will perform *in vivo*, I will transplant the cells into a receptive recipient mouse model. In this model I will study if genetically manipulated HSCs can produce all mature human blood cells and if there is a change in engraftment ability or developmental potential after overexpression of cell cycle regulators. So I will use a broad spectrum of antibodies to detect engrafted hematopoietic progenitors (e.g. CD7, CD38, CD105) and evolved human mature blood cells as erythrocytes (CD235a), B-cells (CD19, CD22), T cells (CD3, CD4, CD8, CD25), monocytes (CD33), neutrophils (CD16) or NK-cells (CD16, CD56) in transplanted recipient mice. With the opportunities that I would get with the IT-Box 139 I also could look for different cell subsets (e.g. T-cell subsets) and differentiation stages as well as for the survival (Annexin V) of transduced and transplanted human HSCs *in vivo*.

ImmunoTools IT-Box-139 for Nicole Mende 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](#)