ImmunoTools IT-Box-139 Award 2012

Caterina Sturtzel

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Function of MEF2C in Endothelial Cells

For my PhD thesis I focused on investigations about the transcription factor Myocyte enhancing factor 2C (MEF2C) and its role during angiogenesis. MEF2C is reported to be crucial for differentiation of various cell types like muscle or brain cells and also in endothelial cells. These build up blood vessels, which are formed by the process of angiogenesis, the sprouting outgrowth of vessels from pre-existing ones. This process is induced by growth factor VEGF-A, by which expression of MEF2C mRNA in ECs can be elevated. This stimulation, as I could demonstrate, proceeds via the classical VEGF receptor 2 pathway. In *in vitro* angiogenesis assay I could show, that MEF2C has an inhibitive effect on sprout formation of ECs, presumably caused by a migratory not a proliferation defect. I further defined in a microarray experiment several genes to be targets of MEF2C after its overexpression in EC, one being indeed involved in the inhibitive effects observed on sprouting. Knockdown of this gene in ECs by shRNA rescued the inhibition. Furthermore I plan to investigate the role of MEF2C in endothelial progenitor cells. These are isolated form cord blood when they form colonies after defined time of seeding. These cells have to be characterized after isolation by FACS analysis to obtain comparable results when different cell batches are used, because sometimes contaminations with other blood cell types can appear. Also viability of the cells should be examined. Therefore I would like to use Annexin V-APC antibodies (GFP virus often used), CD14-FITC, CD16-FITC, CD3-FITC, CD4-FITC, CD8-FITC, CD19-FITC, CD56-PE anitbodies to detect classical blood suspension cells, and IgG1-FITC, IgG1-PE, IgG1-APC, IgG2a-FITC, IgG2a-PE, IgG2a-APC, because as s PhD you learn, there are never enough controls.

ImmunoTools IT-Box-139 for Caterina Sturtzel include 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