

ImmunoTools IT-Box-139 Award 2012



Valerie R. Wiersma

PhD Supervisor: Dr. Edwin Bremer

University Medical Center Groningen
Surgical Research Laboratory (Translational Oncology)
Hanzeplein 1, 9700 GZ, Groningen

Immunomodulatory effects of Galectins in cancer therapy

The family of galectins comprises 15 mammalian carbohydrate-binding proteins with affinity for beta-galactosides. A hallmark feature of all galectins is the so-called carbohydrate-recognition domain (CRD), via which galectins interact with various glycoproteins and glycolipids to regulate numerous different processes. Accumulating evidence indicates that galectins play critical roles in modulation of the immune system, promoting both anti- and pro-inflammatory effects depending on concentration, cell type and micro-environment. In particular, galectins are known for their immunomodulatory effect on T-cell immunity.

During malignant transformation, the expression of galectins is frequently altered and many studies indicate that this altered expression impacts on anti-tumor immunity. Preliminary data generated during my ongoing PhD-study further supports this notion, with prominent pro-immunogenic effects of galectins *in vitro* whereas these galectins are down-regulated in many types of cancer. For a better understanding of the possible role as well as therapeutic potential of such galectins, my study aims to identify immunomodulatory effects on human lymphocytes of healthy volunteers and cancer patients.

The antibodies of the **ImmunoTools** IT-box-139 will be a very useful tool to evaluate the possible modulatory effects of galectins on immune cell function and phenotype by flow cytometry. In particular, IT-box-139 includes many antibodies used for the identification of different T-cells populations (CD3, CD4, CD8, CD45RA, CD45RO, CD45RB, CD62L), B-cells (CD19, CD20, CD38, CD27), NK-cells (CD16, CD56), but

also other immune cells like macrophages (CD14, CD40, CD11b). Further, possible cytotoxic activity of galectins towards immune cells will be monitored by flow cytometric staining for annexin-V, also included in IT-box-139.

In conclusion, the **ImmunoTools** award would greatly contribute to my research by gaining insight into galectin-mediated immune modulation and evaluating the therapeutic potential of galectins.

ImmunoTools IT-Box-139 for Valerie R. Wiersma 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

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