ImmunoTools IT-Box-139 Award 2012

Rebecca Riise

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Innate crosstalk and its role in chronic myeloid leukemia

Cellular interactions between Natural Killer (NK) cells and myeloid cells are of importance in many aspects of immunity. This crosstalk has been reported to result in: i) mutual activation, ii) NK cell-mediated killing of the myeloid cell, iii) NK cell inactivation or apoptosis due to release of reactive oxygen species (ROS) or other suppressive mediators from the myeloid cell.

To avoid autoimmune reactions, myeloid cells possess and mediate regulatory functions to control lymphocyte reactivity. However, in the case of a myeloid malignancy these regulatory mechanisms may disrupt and prevent cytotoxic lymphocytes from eliminate leukemic cells.

Thus, the purpose of my PhD project is to define cellular structures and soluble components involved in the delicate balance that determines the outcome of encounters between NK cells and myeloid cells. The proposed studies may identify novel strategies to sustain and activate cellular immunity in chronic myeloid leukemia (CML). The specific aims are:

-To establish the mechanisms involved in NK cell-induced oxidative burst and the potential effect of histamine dihydrochloride (HDC).
-To clarify whether NK cells trigger apoptosis/lysis of malignant CML cells, and if so, to determine NK cell structures involved.
-To study NK cell-mediated antibody-dependent cellular cytotoxicity (ADCC) of CML cells by using a humanized anti-CD33 antibody.
-To determine the potential role of LAMP-1 in neutrophil/CML cell resistance to NK cell lysis.

The antibodies from the IT-Box 139 from ImmunoTools will be used in Flow Cytometry-based panels for analysis of intra- and extracellular immunomarkers of malignant CML-cells and NK cells.

ImmunoTools IT-Box-139 for Rebecca Riise 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