ImmunoTools IT-Box-139 Award 2013

Ewelina Krzywinska

PhD Supervisor: Dr. Martin Villalba

INSERM U1040
Institut de Recherche en Biothérapie
CHU Montpellier Hôpital Saint-Eloi
80, av. Augustin Fliche
34295 Montpellier Cedex 5. France

Study of the cytotoxicity of activated NK cells on specific tumour cells from patients with different haematopoietic malignancies.

Our research team is very interesting in several aspects of the NK cells biology, such as culture, cytotoxicity, activation and amplification.

The purpose of my PhD is to establish the best way to amplify and activate NK cells (with or without accessory cells $CD19^+$) to specifically kill the tumoral cells from the blood or bone marrow samples of patients with:

- ⇒ B CLL (B-cell chronic lymphocytic leukemia $CD5^+/CD19^+$; $CD19^+/CD20^+$),
- ⇒ MM (Multiple myeloma $CD38^+/CD138^+$),
- ⇒ AML (Acute myeloid leukaemia $CD14^+/CD33^+/CD34^+$),
- ⇒ MDS (Myelodysplastic syndromes $CD33^+/CD34^+$),
- ⇒ B-cell lymphoma ($CD10^+/CD19^+$; $CD19^+/CD20^+$),
- ⇒ T-cell lymphoma ($CD2^+/CD3^+/CD5^+$).

First, the most important part of my work is to phenotype all population after isolating the cells from fresh umbilical cord blood and blood samples of patients using density gradient centrifugation. Using the different combination of antibodies provided by the ImmunoTools *IT-Box-139*, I will observe the most important markers to determine all of interesting populations and their status:

1) for UCB (Umbilical cord blood) Annexin V, CD3, CD14, CD16, CD19, CD25, CD45, CD45RA, CD45RO, CD56, CD69;
2) for samples from patients (Annexin V, CD2, CD3, CD5, CD10, CD14, CD19, CD20, CD33, CD34, CD38, CD138).

Secondly, antibodies from *IT box* could be used to detect and phenotype the different populations during and after activation and look at the amplification of Natural Killer cells ($CD56^+$), T Lymphocytes ($CD3^+$) and Natural Killer T cells ($CD3^+/CD56^+$) and their activity status (CD16, CD25, CD45RA, CD45RO, CD69).

Finally, the *IT box* could be used to determinate the cytotoxicity of activated NK cells by flow cytometry.

ImmunoTools *IT-Box-139.2* for **Ewelina Krzywinska** 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