ImmunoTools *special* Award 2015

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Getting a deeper insight into the mechanisms of Rituximab treatment of human B cells and to reveal further roles of the complement system in this process.

Our main field of research is the role of natural immunity, its relationship to adaptive immunity, and the regulation of immune processes. Now we examine the functions of pathogenic B cells in chronic lymphocytic leukaemia (CLL) and the effects of complement system on B cells during and after treatment with Rituximab.

While the mechanism of complement-mediated lysis of Rituximab-treated B cells – particularly in the case of CLL patients – has been extensively studied, the fate of those cells which are not lysed still need to be investigated. These cells might be of particular importance in view of a recent result, showing the appearance of pathogenic long-lived plasma cells after treatment. We aim to characterize the cells that – most probably - have been altered due to the treatment with the CD20 specific antibody.

During our work we use primary cells isolated from the peripheral blood of CLL patients and healthy donors, as well as some B cell lines to reveal more details of the effects of Rituximab treatment and understand how the complement system regulates B cell functions in CLL. For the experiments, we routinely use ImmunoTools reagents, such as fluorescently labeled antibodies to identify different human cell populations and cell surface antigens (for example, fluorescently labelled antibodies to the following antigens: CD3, CD19, CD16, CD56, CD14, CD80, CD86, CD71, CD20, CD38, CD27, etc.). The labeled antibodies are either used to separate the cell populations by fluorescent cell sorter and/or to test the purity of the isolated cell populations, for example CD3 as T cell marker, CD16 as NK cell marker, etc. Furthermore we use ImmunoTools reagents to analyze the expression of other markers on the surface of healthy and pathogeneic B cells: for the examination of activation markers we use fluorescently labelled antibodies against CD80, CD86, CD25 and CD71 cell surface antigens,

and for identifying distinct subpopulations of B cells - for example to define the ratio of the plasma cells in the peripheral blood of patients and healthy donors – we use fluorescent antibodies specific to the naiv ($CD19^{+}CD27^{-}$), memory ($CD20^{+}CD19^{+}CD27^{+}CD38^{-}$) or plasma cell ($CD20^{-}CD19^{low}CD27^{high}CD38^{++}$) subpopulation markers.

Referring to the above mentioned experiments, the excellent reagents of ImmunoTools will be very useful for our experiments, especcially for our flow cytometry and confocal laserscanning microscopy analysis.

ImmunoTools *special* AWARD for **Katalin Török** includes 25 reagents

FITC - conjugated anti-human CD14, CD16, CD19, CD20, CD25, CD35, CD38, CD71, CD86, Annexin-V

PE - conjugated anti-human CD3, CD11b, CD11c, CD20, CD21, CD27, CD80, Annexin-V

APC - conjugated anti-human CD3, CD11b, CD11c, CD16, CD19, CD20, CD25

DETAILS more AWARDS