ImmunoTools IT-Box-139 Award 2012

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Development of human B cells

Sphingosine-1-phosphate (S1P) has emerged as a central signaling molecule regulating lymphocyte migration. S1P binds to five receptors (S1P1-5), which are differentially expressed in the various tissues and belong to the 7 TM G protein-coupled receptor family. Circulation of B-lymphocytes is essential for normal immune responses and plays an important role in diverse pathophysiological processes like multiple sclerosis, immunodeficiency and cancer.

After initial development in the bone marrow from early B cell progenitors, immature/transitional B cells enter the circulation and migrate to B cell follicles in the spleen, where they differentiate into mature B cells. Depending on their expression of surface markers, location and reactivity, B cells are classified as naïve or marginal zone (MZ) B cells. Antigen-driven activation initiates the germinal center (GC) reaction, where mature B cells interact with T-helper cells and differentiate into memory cells or antibody secreting plasma cells (PCs) to provide humoral immunity.

For mouse B cells it has been shown that S1P binding to S1P1 triggers the exit from secondary lymphatic organs and the shuttle of MZ B cells between follicles and the marginal zone of the spleen. It also induces the egress of immature B cells from and migration of PCs to the bone marrow. In addition, S1P3-dependent migration has been reported for immature and MZ B cells. S1P2 signals antagonize chemokine receptor signaling in mouse lymphocytes and keep B cells in the GC. S1P4 is also expressed by murine lymphocytes and has been found to modulate the migration of T cells but had little effect on the migration of B cells. S1P receptors are targeted in immunomodulatory therapy, but their expression in human B-lymphocytes and their contribution to pathologic processes is unknown.

In my Ph.D. thesis I study S1P receptor expression and function in human (B) cells. Since there are lots of specific cell surface markers that can be used to identify various cell-types the ImmunoTools Box-139 would provide antibodies that allow the identification, sorting and screening of the lymphocyte subsets I am interested in.

ImmunoTools IT-Box-139 for Heiko Sic 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