# ImmunoTools IT-Box-139 Award 2012

**Ewoud Compeer**

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**Human dendritic cell-intrinsic mechanisms crucial in efficient lymphocyte activation.**
Dendritic cells (DCs) have an essential role in the elicitation of most adaptive immune responses. Hence, DCs are equipped with specialized molecular machinery that enables superb antigen presentation to activate lymphocytes in presence of costimulatory molecules and cytokines. Early in lymphocyte activation, DCs and lymphocytes come into close contact that initiates bidirectional signaling and result in formation of a structure called the immune synapse. This interaction is crucial for effective lymphocyte activation as illustrated by Wiskott-Aldrich syndrome or DOCK8 immunodeficiency patients. Both diseases have defects in immune synapse formation and share clinical manifestations such as elevated IgE levels, Herpes viral infections, and increased tumor incidence. We are focusing on the cell biological processes that occur prior to/ during this DC-lymphocyte interaction. Ultimately, modulation of these DC-intrinsic machinery may become successfully applied during immune therapy strategies.

We make use of live cell imaging techniques that allow visualization of signals required early in lymphocyte activation. This specialized technique enables us to investigate DC-intrinsic endosomal remodeling and trafficking prior to/during human DC-$CD8^+$ T cell contact and their possible role in cross-presentation.

On the other hand we investigate the role of DCs early in the humoral response to the Thymus-Independent type 2 Pneumococcal polysaccharide antigens. In this project we combine the specialized live cell imaging technique with purified pneumococcal polysaccharides and our unique immortalized pneumococcal polysaccharide serotype-specific B cell clones to identify DC-intrinsic machinery pivotal during DC-B cell contact. Ultimately, elucidating DC-intrinsic machinery potentiating Pneumococcal polysaccharide immune responses will facilitate the development of new intervention strategies for diseases caused by encapsulated bacteria.

In the first project we need antibodies of Immunotools to monitor DC differentiation, maturation and viability. More importantly, the immortalized Pneumococcal-polysaccharide specific B cell clones are generated by a recently introduced method (Nat. Med 2011) and the clones need to be characterized as it is not investigated before. For this characterization we require a panel of Immunotool antibodies including CD10, CD19, CD27, and CD38.

**ImmunoTools** IT-Box-139 for Ewould Compeer 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