ImmunoTools IT-Box-Cy55M-Award 2013

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T-cell-based immunotherapy agains MOPC315 myeloma

Using a murine model of $CD4^+$ T-cell-mediated immunoprotection against the MOPC315 plasmacytoma cell line, we are investigating the mechanism underlying tumor growth inhibition. We find that transgenic mice expressing T-cell receptors specific for a secreted antigen produced by the plasmacytoma cells are protected against subcutaneous challenge with tumor cells, whereas non-transgenic controls develop rapidly growing tumors. Interaction with the transgenic T-cell receptor requires presentation on MHC class II, which is not expressed by the tumor cells themselves. Protection thus seems to occur via indirect presentation of secreted tumor antigens on tumor-infiltrating antigen-presenting cells, predominantly macrophages. There is a growing interest in the importance of tumor-infiltrating macrophages during the progression of malignant disease. This is particularly interesting in the setting of an antitumor immune response, in which macrophages are key interaction partners of both infiltrating T cells and the tumor cells themselves. By proteomics approaches, we are exploring the alterations in cytokine profiles within the tumor bed that occur after tumor challenge. Using in vivo and in vitro tumor growth inhibition assays, we will further characterize the mechanisms by which activated macrophages can inhibit tumor growth. Furthermore, we are exploring the mechanisms by which tumor cells dampen macrophage activation, thus counter-acting the immune response.

In this respect, we would like to explore the effects of various cytokines on the phenotype and function of macrophages isolated from tumors. This includes cytokines secreted by the tumor cells themselves (including IL-1beta, TGF-beta, IL-4, IL-10 and IL-6), and cytokines released from activated T cells (IFN-gamma). This will allow us to directly assess the function of particular cytokines in the interplay between tumor cells, macrophages and T cells.

ImmunoTools *IT-Box-Cy55M* for **Fredrik Schjesvold**
includes 55 recombinant mouse cytokines

rm EGF, rm Eotaxin / CCL11, rm FGF-a / FGF-1, rm FGF-b / FGF-2, rm FGF-8, rm Flt3L / CD135, rm G-CSF, rm GM-CSF, rm GRO-a / CXCL1, rm GRO-b / CXCL2, rm IFNgamma, rm IL-1alpha, rm IL-1beta, rm IL-2, rmIL-3, rm IL-4, rm IL-5, rm IL-6, rm IL-7, rm IL-9, rm IL-10, rm IL-11, rm IL-13, rm IL-15, rm IL-16, rm IL-17A, rm IL-17C, rm IL-17F, rm IL-19, rm IL-20, rm IL-21, rm IL-22, rm IL-25 / IL-17E, rm IL-27, rm IL-31, rm IL-33, rm IP-10 / CXCL10, rm LIF, rm MCP1 / CCL2, rm M-CSF, rm MIP-1α/ CCL3, rm MIP-1β / CCL4, rm MIP3α / CCL20, rm MIP3β / CCL19, rm NGF-beta, rm PDGF-AA, rm PDGF-BB, rm RANTES / CCL5, rm sCD40L / CD154, rm SCF, rm SDF-1α / CXCL12a, rm SDF-1β / CXCL12b, rm TNFα, rm TPO, rm VEGF DETAILS