ImmunoTools IT-Box-Cy55M-Award 2013

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Role of M2 Macrophage and Th2 immune response in renal fibrosis

Our research group is interested in the search for new mechanisms involved in renal fibrosis. Monocytes maintain the balance between pro- and anti-inflammatory activities. These cells develop into different subsets, classically (M1) and alternatively (M2) activated cells. M1 polarization can be mediated by LPS, interferon gamma (IFN-γ) and GM-CSF. This subset of cells secrete Th1(pro-inflammatory) cytokines such as interleukin (IL)-1, IL-6, IL-12/IL-23, tumor necrosis factor (TNF) and play a role in tissue destruction. M2 polarization is mediated via M-CSF, IL-4, IL-10, IL-13, glucocorticoids and they secrete Th2 (anti-inflammatory) response. A number of evidences suggest that M2 macrophages may play an important role in renal fibrosis. M2 macrophages are involved in tissue repair, fibrosis and angiogenesis. Preliminary data from our group show an increased M2 macrophage population and an elevation of Th2 cytokines levels in a renal fibrosis murine model.

For in vitro studies, primary murine peritoneal macrophages will be isolated and polarization to M1 or M2 macrophages will be induced with Th1 and Th2 cytokines respectively. We will examine the emerging pro-fibrotic markers and fibrotic pathways M1 and M2 macrophage in renal fibrosis via Transforming Growth Factor beta (TGF-β) and connective tissue growth factor (CTGF). Furthermore, we will determine different chemokines involved in the macrophage recruitment process.

The ImmunoTools *IT-Box-By55M* would be helpful to me. We will use many cytokines and chemokines from the ImmunoTools Box to determine which are the specific ones implicated in renal fibrosis in the M2 macrophage population.

ImmunoTools *IT-Box-Cy55M* for **Alfonso Rubio Navarro**
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.

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