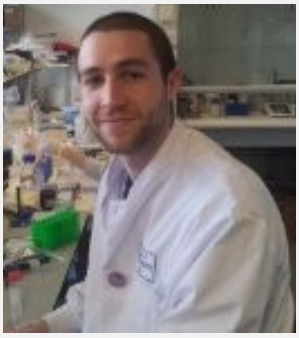
ImmunoTools IT-Box-Cy55M-Award 2013



Joseph deCourcey

PhD Supervisor: Dr. Christine Loscher

Immuno-modulation lab, School of Biotechnology,
Dublin City University, Dublin 9, Ireland

Immuno-modulation of resident cells in the gut during inflammation.

Our lab has a number of ongoing projects investigating the resident immune cells found in the gut during a number of disease states such as inflammatory bowel disease and *C. difficile* infection. We use *in vivo* murine models of these diseases and we are interested in the immune response during disease with a focus on dendritic cells (DC), $CD4^+$ T-helper cells (Th) and macrophage populations (MØ).

Initial screening *in vitro* involves primary–derived immune cells from mice using growth factors rmM-CSF and rmGM-CSF to differentiate MØ and DC populations respectively. Our protocols for T helper cell isolation and polarisation requires a panel of recombinant cytokines that drive naïve cells into distinct populations. These include Th1 (rmIFN-γ, rmIL-2), Th2 (rmIL-2, rmIL-4), Th17 (rmIL-6, IL1β) and iTreg cells (rmIL-10). Using these primary generated cells we evaluate potential therapeutic compounds and investigate pathways for targeting disease.

Recombinant proteins are a crucial tool in *ex vivo* studies following isolation of cell populations of interest from mouse models of disease. Assessing cells isolated at various stages of disease requires a wide range of quality recombinant proteins; for example, migration assays (MØ - rmCCL2, rmCCL3, rmCCL4, IL-2, rmGM-CSF; DC's - CCL19, rmIL-2), co-culture experiments (rmIL-2), and various immuno-modulation experiments in which we stimulate immune cells with recombinant cytokines of interest to detect cellular responses.

Using recombinant proteins allows us to assess cytokine secretion profiles and surface marker regulation of gut resident cells during disease in order to identify potential pathways for targeting inflammatory disease and gastrointestinal infection.

ImmunoTools IT-Box-Cy55M for Joseph deCourcey includes 55 recombinant 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