ImmunoTools IT-Box-Cy55M-Award 2013

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The immunomodulatory effect of Fas(CD95) on Toll like Receptor 3 and Toll like Receptor 4 Signalling Pathways

Fas is a well characterised death receptor with recent studies suggesting that in addition to its apoptotic function, it may also play a role in inflammation. Recent studies suggest that the Fas adapter protein FADD (Fas Associated Death Domain) can interact with Toll like Receptor (TLR) pathways through the death domain (DD) – DD interactions.

TLRs play an important role in innate immunity, recognising pathogen associated membrane proteins (PAMPs), resulting in the production of cytokines and chemokines. Upon TLR3 recognition of dsRNA, a component of viral replication, activation of this pathway results in production of anti-viral components such as IFNβ. Lipopolysaccharide (LPS), a component of the peptidoglycan cell wall of Gram negative bacteria, is recognised by TLR4. Inflammatory cytokines such as IL-8 and TNFα are produced through the MyD88 dependent pathway, while interferon production occurs through the MyD88 independent pathway.

Our research to date has identified potentially novel interactions between Fas and both TLR3 and TLR4 signalling pathways.

The ImmunoTools IT-Box-Cy55M would be of great benefit to me as it would be used to determine if the cytokines alone play a role in augmenting cytokine and chemokine productions. This would be determined by pre-treating cells with anti-Fas antibody for 1 hour prior to treating cells with cytokines from the IT-Box-Cy55M. Results would be compared to both untreated cells and cells treated with cytokines alone.

ImmunoTools IT-Box-Cy55M for Caitriona Lyons 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