ImmunoTools IT-Box-Cy55M-Award 2013

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The Role of Host Nuclear Factor-κB signaling in Malignant Pleural Effusion

Malignant pleural effusion (MPE) presents a significant clinical problem and a mechanistically intriguing phenotype of cancer, for which current treatments offer mere symptomatic relief. We have developed relevant preclinical models of MPE, using which we are currently studying the pathobiology of MPE provocation by pleural metastatic cancer cells. Along these lines of research, we have identified a host nuclear factor (NF)-κB response that is tightly linked in time and space with experimental MPE development. Furthermore, we have pinned this response to host myeloid cell subsets and have shown that it is transplantable with bone marrow transfer after total body irradiation of mice. This response may be tumor-promoting, as elimination of pleural myeloid cells during MPE formation using intrapleural clodronate was protective in two different mouse models of the disease. In the search for tumor-derived factors responsible for host myeloid NF-κB activation, we have generated murine RAW264.7 macrophages stably expressing a relevant NF-κB.eGFP.luciferase reporter. We are currently using this high-throughput model in conjunction with mapping the transcriptome of MPE-competent mouse tumor cells to screen for and identify tumor-derived mediators of the above-described host myeloid NF-κB response. In this direction, the ligands offered by ImmunoTools would be valuable adjuncts. These studies will hopefully provide proof-of-concept data that can be used for translation of anti-NF-κB-targeted therapies into clinical trials against MPE.

ImmunoTools IT-Box-Cy55M for Anastasios D. Giannou

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