Active Tumor Necrosis Factor Alpha (TNFa)

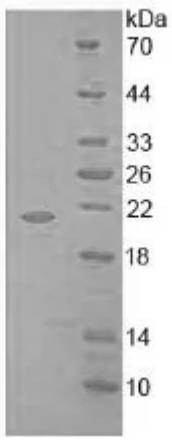
Catalog#:PEH12234

概述（Summary）

别称（Alternative Names）	DIF; TNF-A; TNFSF2; Cachectin; Tumor Necrosis Factor Ligand Superfamily Member 2
纯度（Purity）	Greater than 95% as determined by reducing SDS-PAGE.
内毒素（Endotoxin level）	Please contact with the lab for this information
蛋白构建（Construction）	【Val77-Leu233】
Accession #	P01375
表达宿主（Host）	E.coli
种属（Species）	Homo sapiens (Human)
预测分子量（Predicted MW）	21.0 kDa
制剂（Form）	Lyophilized from a 0.2 μm filtered solution of PBS, pH7.4, containing 0.01% SKL, 1mM DTT, 5% Trehalose and Proclin300.
运输方式（Shipping）	The product is shipped with ice bag. Upon receipt, store it immediately at the temperature listed below.
稳定性&储存（Stability &Storage）	12 months at -20°C to -80°C in lyophilized state.6 months at -20°C to -80°C under sterile conditions after reconstitution.7-10 days at 2°C to 8°C under sterile conditions after reconstitution.Please minimize freeze-thaw cycles.
复溶（Reconstitution）	Reconstitute in 10mM PBS (pH7.4) to a concentration of 0.1-1.0 mg/mL. Do not vortex.
背景介绍（References）	Cytokine that binds to TNFRSF1A/TNFR1 and TNFRSF1B/TNFBR. It is mainly secreted by macrophages and can induce cell death of certain tumor cell lines. It is potent pyrogen causing fever by direct action or by stimulation of interleukin-1 secretion and is implicated in the induction of cachexia, Under certain conditions it can stimulate cell proliferation and induce cell differentiation. Impairs regulatory T-cells (Treg) function in individuals with rheumatoid arthritis via FOXP3 dephosphorylation. Upregulates the expression of protein phosphatase 1 (PP1), which dephosphorylates the key 'Ser-418' residue of FOXP3, thereby

inactivating FOXP3 and rendering Treg cells functionally defective. Key mediator of cell death in the anticancer action of BCG-stimulated neutrophils in combination with DIABLO/SMAC mimetic in the RT4v6 bladder cancer cell line. Induces insulin resistance in adipocytes via inhibition of insulin-induced IRS1 tyrosine phosphorylation and insulin-induced glucose uptake. Induces GKAP42 protein degradation in adipocytes which is partially responsible for TNF-induced insulin resistance. Plays a role in angiogenesis by inducing VEGF production synergistically with IL1B and IL6.; The TNF intracellular domain (ICD) form induces IL12 production in dendritic cells.

电泳图（SDS-PAGE image）



Greater than 95% as determined by reducing SDS-PAGE.

活性图（Bioactivity image）

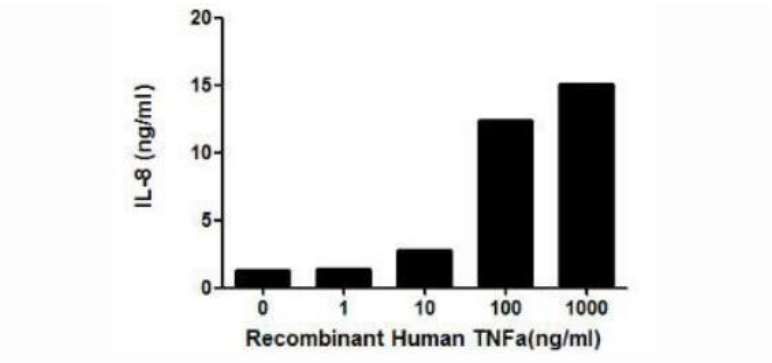


Figure 2. IL-8 level in the cell supernatant of A549 cells up-regulated by TNFa.

TNFa (Tumor necrosis factor), is mainly secreted by macrophages and can induce cell death of certain tumor cell lines. It has been reported that TNFa can inhibit the proliferation and induce apoptosis of A549 cells, besides, the concentration of IL-1β and IL-8 in cell supernatant will increase after stimulation. Therefore, a stimulation assay of TNFa was conducted using A549 cells. Briefly, A549 cells were incubated in DMEM with different concentrations of TNFa (1ng/mL, 10ng/mL, 100ng/mL, 1000ng/mL) for 8h, after which the concentration of IL-1β and IL-8 in the cell supernatant were detected by ELISA. IL-1β and IL-8 levels in the

cell supernatant of A549 cells increased significantly after stimulated with IL-1β, the data was shown in Figure 1 and Figure 2 separately. Tumor necrosis factor alpha (TNF-a), also known as cachectin and TNFSF2, is mainly secreted by macrophages and is the prototypic ligand of the TNF superfamily. TNF-a plays important roles in processes such as immunomodulation, fever, inflammatory response, inhibition of tumor formation and inhibition of viral replication. TNFa signals through two distinct cell surface receptors, TNFR1 (TNFRSF1A, CD120a, p55) and TNFR2 (TNFRSF1B, CD120b, p75). Thus a functional binding ELISA assay was conducted to detect the interaction of recombinant human TNF-a and recombinant mouse TNFRSF1B. Briefly, TNF-a was diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100 µl were then transferred to TNFRSF1B-coated microtiter wells and incubated for 1h at 37℃. Wells were washed with PBST and incubated for 1h with anti-TNF-a pAb, then aspirated and washed 3 times. After incubation with HRP labelled secondary antibody for 1h at 37℃, wells were aspirated and washed 5 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37℃. Finally, add 50 µL stop solution to the wells and read at 450/630 nm immediately. The binding activity of recombinant human TNF-a and recombinant mouse TNFRSF1B was shown in Figure 1, the EC50 for this effect is 0.11 ug/mL.

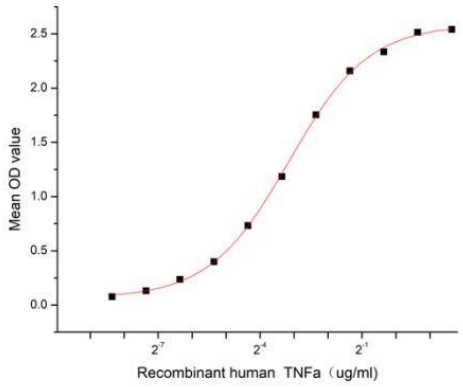


Figure 1. The binding activity of recombinant human TNF-a and recombinant mouse TNFRSF1B

注意事项（Note）

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