Anti-Human GM-CSF Antibody [PS01-52] - BSA and Azide free (Capture)

HA721288

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human
Applications:	ELISA(Cap)
Molecular Wt:	Predicted band size: 16 kDa
Clone number:	PS01-52

Description: Granulocyte-macrophage colony-stimulating factor (GM-CSF), also known as colony-stimulating factor 2 (CSF2), is a monomeric glycoprotein secreted by macrophages, T cells, mast cells, natural killer cells, endothelial cells and fibroblasts that functions as a cytokine. Unlike granulocyte colony-stimulating factor, which specifically promotes neutrophil proliferation and maturation, GM-CSF affects more cell types, especially macrophages and eosinophils. GM-CSF is a monomeric glycoprotein that functions as a cytokine—it is a white blood cell growth factor. GM-CSF also has some effects on mature cells of the immune system. These include, for example, enhancing neutrophil migration and causing an alteration of the receptors expressed on the cells surface. GM-CSF signals via signal transducer and activator of transcription, STAT5. In macrophages, it has also been shown to signal via STAT3. The cytokine activates macrophages to inhibit fungal survival. It induces deprivation in intracellular free zinc and increases production of reactive oxygen species that culminate in fungal zinc starvation and toxicity. Thus, GM-CSF facilitates development of the immune system and promotes defense against infections. GM-CSF also plays a role in embryonic development by functioning as an embryokine produced by reproductive tract. GM-CSF is found in high levels in joints with rheumatoid arthritis and blocking GM-CSF as a biological target may reduce the inflammation or damage. In critically ill patients GM-CSF has been trialled as a therapy for the immunosuppression of critical illness, and has shown promise restoring monocyte and neutrophil function, although the impact on patient outcomes is currently unclear and awaits larger studies.

Immunogen:	Recombinant full length protein.
Positive control:	Recombinant human GM-CSF protein.
Subcellular location:	Secreted.
Database links:	SwissProt: P04141 Human
Recommended Dilutions:	
ELISA(Cap)	Use at an assay dependent concentration. Can be paired for Sandwich ELISA with Rabbit monoclonal [PS01-38] to GM-CSF (Detector) (HA721289).
Storage Buffer:	PBS (pH7.4).
Storage Instruction:	Store at +4℃ after thawing. Aliquot store at -20℃. Avoid repeated freeze / thaw cycles.
Purity:	Protein A affinity purified.

Images

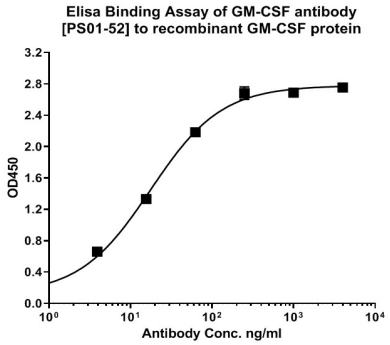

Fig1: The binding activity of GM-CSF (HA721288) with recombinant human GM-CSF protein.

Immobilized recombinant human GM-CSF protein at 1 μg/ml overnight at 4℃. Then blocked with 1xTBS/1%BSA for 1 hour at 37℃, and incubated with the primary antibody (HA721288) for 45min at 37℃. Then the plate was washed and incubated with 50 μl per well of Goat anti-Rabbit IgG-HRP for 0.5 hour at 37℃. Detection was performed using an Ultra TMB Substrate for 10 minutes at room temperature in the dark. The reaction was stopped with sulfuric acid and absorbances were read on a spectrophotometer at 450 nm.

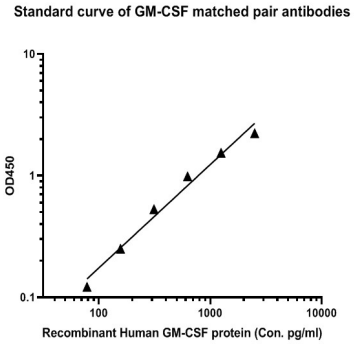

Fig2: Standard curve of GM-CSF matched pair antibodies:

Sandwich ELISA analysis of GM-CSF matched pair antibodies Elisa assay was performed by coating wells of a 96-well plate with 50 μl per well of capture antibody HA721288 [PS01-52] diluted in carbonate/bicarbonate buffer, at a concentration of 4 μg/mL overnight at 4℃. Wells of the plate were washed, blocked with 150 μl 1% BSA/PBST blocking buffer, and incubated with serial diluted recombinant human GM-CSF protein starting from 20 ng/ml to 19 pg/ml for 1 hour at 37℃. The plate was washed and incubated with 50 μl per well of detect antibody [PS01-38] (Biotin, 1:2,000) for 1 hour at 37℃. Then the plate was washed and incubated with 50 μl per well of Streptavidin-HRP for 0.5 hour at 37℃. Detection was performed using an Ultra TMB Substrate for 10 minutes at room temperature in the dark. The reaction was stopped with sulfuric acid and absorbances were read on a spectrophotometer at 450 nm.

Note: All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE".

Background References

1. Francisco-Cruz A, Aguilar-Santelises M, Ramos-Espinosa O, Mata-Espinosa D, Marquina-Castillo B, Barrios-Payan J, Hernandez-Pando R (January 2014). "Granulocyte-macrophage colony-stimulating factor: not just another haematopoietic growth factor". Medical Oncology. 31 (1): 774.
2. Deiß A, Brecht I, Haarmann A, Buttmann M (March 2013). "Treating multiple sclerosis with monoclonal antibodies: a 2013 update". Expert Review of Neurotherapeutics. 13 (3): 313–35.