Anti-Human IFNGR1 Antibody [PSH06-43] - BSA and Azide free (Capture)

HA722679

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human
Applications:	ELISA(Cap)
Clone number:	PSH06-43

Description: Receptor subunit for interferon gamma/INFG that plays crucial roles in antimicrobial, antiviral, and antitumor responses by activating effector immune cells and enhancing antigen presentation. Associates with transmembrane accessory factor IFNGR2 to form a functional receptor. Upon ligand binding, the intracellular domain of IFNGR1 opens out to allow association of downstream signaling components JAK1 and JAK2. In turn, activated JAK1 phosphorylates IFNGR1 to form a docking site for STAT1. Subsequent phosphorylation of STAT1 leads to dimerization, translocation to the nucleus, and stimulation of target gene transcription. STAT3 can also be activated in a similar manner although activation seems weaker. IFNGR1 intracellular domain phosphorylation also provides a docking site for SOCS1 that regulates the JAK-STAT pathway by competing with STAT1 binding to IFNGR1. A form of Mendelian susceptibility to mycobacterial disease, a rare condition caused by impairment of interferon-gamma mediated immunity. It is characterized by predisposition to illness caused by moderately virulent mycobacterial species, such as Bacillus Calmette-Guerin (BCG) vaccine, environmental non-tuberculous mycobacteria, and by the more virulent Mycobacterium tuberculosis. Other microorganisms rarely cause severe clinical disease in individuals with susceptibility to mycobacterial infections, with the exception of Salmonella which infects less than 50% of these individuals. Clinical outcome severity depends on the degree of impairment of interferon-gamma mediated immunity. Some patients die of overwhelming mycobacterial disease with lepromatous-like lesions in early childhood, whereas others develop, later in life, disseminated but curable infections with tuberculoid granulomas.

Immunogen:	Recombinant protein within Human IFNGR1 aa 18-245.
Positive control:	Recombinant standard Human IFNGR1 protein (HA210514).
Subcellular location:	Cell membrane.
Database links:	SwissProt: P15260 Human
Recommended Dilutions:	
ELISA(Cap)	Use at an assay dependent concentration. Can be paired for Sandwich ELISA with Rabbit monoclonal [PSH06-44] to Human IFNGR1 antibody (Detecor) (HA722680) and recombinant standard Human IFNGR1 protein (HA210514) as the standard. The reference range value is 41.2-10,000 pg/ml.
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

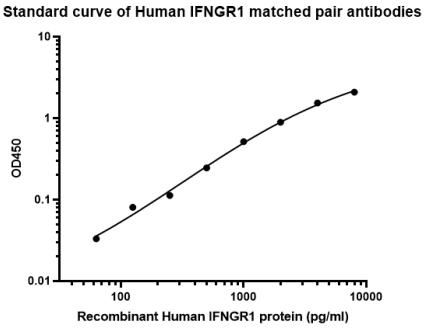

Fig1: Sandwich ELISA analysis of human IFNGR1 matched pair antibodies

Elisa assay was performed by coating wells of a 96-well plate with 50 µl per well of capture antibody (HA722679) diluted in carbonate/bicarbonate buffer, at a concentration of 2 µg/mL overnight at 4℃. Wells of the plate were washed, blocked with 150 µl 0.05% tween-20 1% BSA blocking buffer, and incubated with serial diluted Recombinant standard Human IFNGR1 protein (HA210514) starting from 8,000 pg/ml to 0 pg/ml and detect antibody (HA722680, Biotin, 0.2 µg/ml) for 1 hour at 30℃ with shaking. Then the plate was washed and incubated with 50 µl per well of SA-HRP for 0.5 hour at 30℃ with shaking. 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.

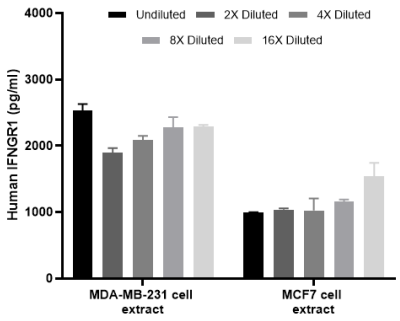

Fig2: Interpolated concentrations of native IFNGR1 in MDA-MB-231 and MCF7 extract samples based on a 1,000 µg/ml extract load.

The concentrations of IFNGR1 were measured in duplicates, interpolated from the IFNGR1 standard curve and corrected for sample dilution. Undiluted samples are MDA-MB-231 extract 50% and MCF7 extract 100%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean IFNGR1 concentration was determined to be 2,358 pg/ml in MDA-MB-231 extract and 1,055 pg/ml in MCF7 extract.

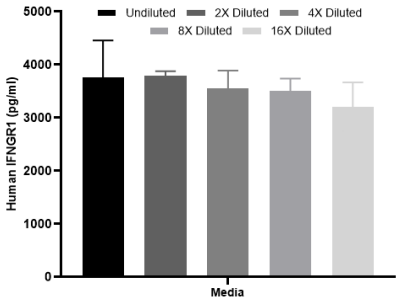

Fig3: Interpolated concentrations of spiked IFNGR1 in human cell culture media samples.

The concentrations of IFNGR1 were measured in duplicates, interpolated from the IFNGR1 standard curves and corrected for sample dilution. Undiluted samples are as follows: cell culture media 50%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2).

Background References

1. van de Wetering D., de Paus R.A., van Dissel J.T., van de Vosse E. Functional analysis of naturally occurring amino acid substitutions in human IFN-gammaR1. Mol. Immunol. 47:1023-1030 (2010)
2. Londino J.D., Gulick D.L., Lear T.B., Suber T.L., Weathington N.M., Masa L.S., Chen B.B., Mallampalli R.K. Post-translational modification of the interferon-gamma receptor alters its stability and signaling. Biochem. J. 474:3543-3557 (2017)