

ARG82862 Human Proinflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IFN gamma, TNF alpha, IL6)

Package: 96 wells
Store at: 4°C, -20°C

Summary

Product Description	ARG82862 Human Proinflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IFN gamma, TNF alpha, IL6) is an Enzyme Immunoassay kit for the semi-quantification of Human Proinflammatory Cytokine (IL1 beta, IFN gamma, TNF alpha, IL6) in serum, plasma and cell culture supernatants. See all Multiplex ELISA kits
Tested Reactivity	Hu
Tested Application	ELISA
Target Name	IL1 beta, IFN gamma, TNF alpha, IL6
Conjugation	HRP
Conjugation Note	Substrate: TMB and read at 450 nm.
Sensitivity	IL1 beta: 4 pg/ml IFN gamma: 4 pg/ml TNF alpha: 8 pg/ml IL6: 5 pg/ml
Sample Type	Serum, plasma and cell culture supernatants.
Standard Range	IL1 beta: 8 - 500 pg/ml IFN gamma: 8 - 500 pg/ml TNF alpha: 15.6 - 1000 pg/ml IL6: 9.4 - 600 pg/ml
Sample Volume	100 µl
Alternate Names	IL1 beta: Interleukin-1 beta; IL1-BETA; IL-1; IL-1 beta; Catabolin; IL1F2 IFN gamma: IFN-gamma; Interferon gamma; Immune interferon; IFG; IFI TNF alpha: Tumor necrosis factor ligand superfamily member 2; DIF; Cachectin; ICD2; ICD1; N-terminal fragment; TNF-a; TNFA; TNFSF2; TNF-alpha; Tumor necrosis factor; NTF IL6: B-cell stimulatory factor 2; CDF; HSF; BSF-2; Interferon beta-2; IL-6; IFNB2; CTL differentiation factor; Interleukin-6; HGF; Hybridoma growth factor; BSF2; IFN-beta-2

Application Instructions

Assay Time	~ 5 hours
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Properties

Form	96 well
Storage instruction	Store components at 4°C or -20°C. Do not expose test reagents to heat, sun or strong light during storage and usage. Please refer to the product user manual for detail temperatures of the components.
Note	For laboratory research only, not for drug, diagnostic or other use.

Gene Symbol	IL1B; IFNG; TNF; IL6
Gene Full Name	Interleukin 1, beta Interferon, gamma Tumor necrosis factor Interleukin 6
Background	<p>IL1 beta: The protein encoded by this gene is a member of the interleukin 1 cytokine family. This cytokine is produced by activated macrophages as a proprotein, which is proteolytically processed to its active form by caspase 1 (CASP1/ICE). This cytokine is an important mediator of the inflammatory response, and is involved in a variety of cellular activities, including cell proliferation, differentiation, and apoptosis. The induction of cyclooxygenase-2 (PTGS2/COX2) by this cytokine in the central nervous system (CNS) is found to contribute to inflammatory pain hypersensitivity. This gene and eight other interleukin 1 family genes form a cytokine gene cluster on chromosome 2. [provided by RefSeq, Jul 2008]</p> <p>IFN gamma: This gene encodes a soluble cytokine that is a member of the type II interferon class. The encoded protein is secreted by cells of both the innate and adaptive immune systems. The active protein is a homodimer that binds to the interferon gamma receptor which triggers a cellular response to viral and microbial infections. Mutations in this gene are associated with an increased susceptibility to viral, bacterial and parasitic infections and to several autoimmune diseases. [provided by RefSeq, Dec 2015]</p> <p>IL6: This gene encodes a cytokine that functions in inflammation and the maturation of B cells. In addition, the encoded protein has been shown to be an endogenous pyrogen capable of inducing fever in people with autoimmune diseases or infections. The protein is primarily produced at sites of acute and chronic inflammation, where it is secreted into the serum and induces a transcriptional inflammatory response through interleukin 6 receptor, alpha. The functioning of this gene is implicated in a wide variety of inflammation-associated disease states, including susceptibility to diabetes mellitus and systemic juvenile rheumatoid arthritis. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Dec 2015]</p>
Function	<p>IL1 beta: Potent proinflammatory cytokine. Initially discovered as the major endogenous pyrogen, induces prostaglandin synthesis, neutrophil influx and activation, T-cell activation and cytokine production, B-cell activation and antibody production, and fibroblast proliferation and collagen production. Promotes Th17 differentiation of T-cells. Synergizes with IL12/interleukin-12 to induce IFNG synthesis from T-helper 1 (Th1) cells (PubMed:10653850). [UniProt]</p> <p>IFN gamma: Produced by lymphocytes activated by specific antigens or mitogens. IFN-gamma, in addition to having antiviral activity, has important immunoregulatory functions. It is a potent activator of macrophages, it has antiproliferative effects on transformed cells and it can potentiate the antiviral and antitumor effects of the type I interferons. [UniProt]</p> <p>TNF alpha: Cytokine that binds to TNFRSF1A/TNFR1 and TNFRSF1B/TNFR. 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 (PubMed:23396208). 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 (PubMed:22517918, PubMed:16829952, PubMed:23396208). 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 (By similarity).</p> <p>The TNF intracellular domain (ICD) form induces IL12 production in dendritic cells. [UniProt]</p> <p>IL6: Cytokine with a wide variety of biological functions. It is a potent inducer of the acute phase response. Plays an essential role in the final differentiation of B-cells into Ig-secreting cells Involved in lymphocyte and monocyte differentiation. Acts on B-cells, T-cells, hepatocytes, hematopoietic progenitor cells and cells of the CNS. Required for the generation of T(H)17 cells. Also acts as a myokine. It is discharged into the bloodstream after muscle contraction and acts to increase the breakdown of fats and to improve insulin resistance. It induces myeloma and plasmacytoma growth and induces nerve cells differentiation. [UniProt]</p>

PTM

IL1 beta: Activation of the IL1B precursor involves a CASP1-catalyzed proteolytic cleavage. Processing and secretion are temporarily associated. [UniProt]

IFN gamma: Proteolytic processing produces C-terminal heterogeneity, with proteins ending alternatively at Gly-150, Met-157 or Gly-161. [UniProt]

TNF alpha: The soluble form derives from the membrane form by proteolytic processing. The membrane-bound form is further proteolytically processed by SPPL2A or SPPL2B through regulated intramembrane proteolysis producing TNF intracellular domains (ICD1 and ICD2) released in the cytosol and TNF C-domain 1 and C-domain 2 secreted into the extracellular space.

The membrane form, but not the soluble form, is phosphorylated on serine residues. Dephosphorylation of the membrane form occurs by binding to soluble TNFRSF1A/TNFR1.

O-glycosylated; glycans contain galactose, N-acetylgalactosamine and N-acetylneuraminic acid. [UniProt]

IL6: N- and O-glycosylated. [UniProt]

Cellular Localization

IL1 beta: Cytoplasm, cytosol. Lysosome. Secreted, exosome. Secreted. [UniProt]

IFN gamma: Secreted. [UniProt]

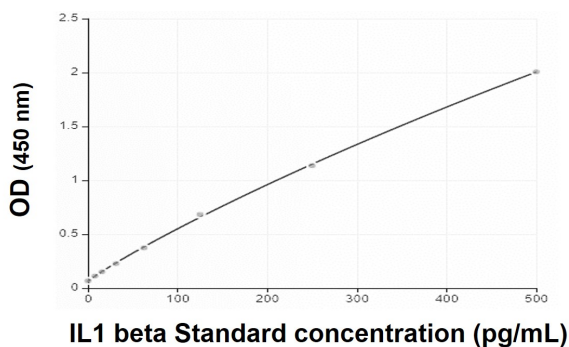
TNF alpha: Cell membrane; Single-pass type II membrane protein. Tumor necrosis factor, membrane form: Membrane; Single-pass type II membrane protein. Tumor necrosis factor, soluble form: Secreted. C-domain 1: Secreted. C-domain 2: Secreted. [UniProt]

IL6: Secreted. [UniProt]

Images

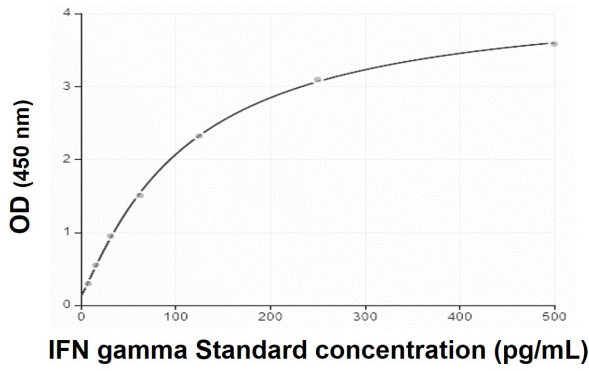
	1	2	3	4	5	6	7	8	9	10	11	12
A	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6
B	IFN-γ	IFN-γ	IFN-γ	IFN-γ	IFN-γ	IFN-γ	IFN-γ	IFN-γ	IFN-γ	IFN-γ	IFN-γ	IFN-γ
C	TNF-α	TNF-α	TNF-α	TNF-α	TNF-α	TNF-α	TNF-α	TNF-α	TNF-α	TNF-α	TNF-α	TNF-α
D	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β
E	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6
F	IFN-γ	IFN-γ	IFN-γ	IFN-γ	IFN-γ	IFN-γ	IFN-γ	IFN-γ	IFN-γ	IFN-γ	IFN-γ	IFN-γ
G	TNF-α	TNF-α	TNF-α	TNF-α	TNF-α	TNF-α	TNF-α	TNF-α	TNF-α	TNF-α	TNF-α	TNF-α
H	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β

Antibodies Coating Pattern In Microtiter Plate of ARG82862



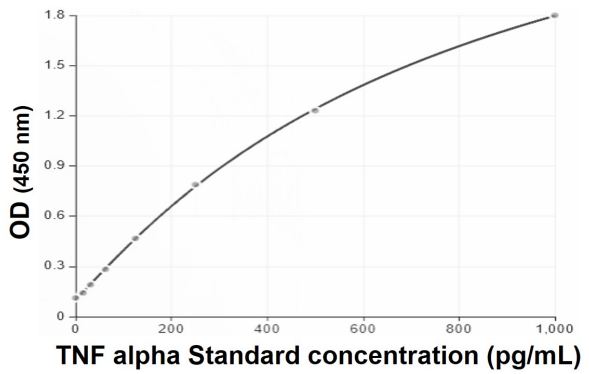
ARG82862 Human Proinflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IFN gamma, TNF alpha, IL6) standard curve image

ARG82862 Human Proinflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IFN gamma, TNF alpha, IL6) results of a typical standard for Human IL1 beta run with optical density reading at 450 nm.



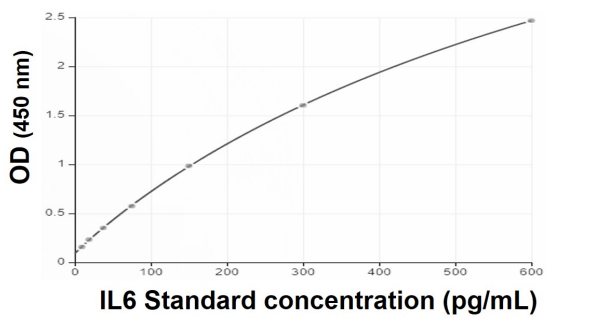
ARG82862 Human Proinflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IFN gamma, TNF alpha, IL6) standard curve image

ARG82862 Human Proinflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IFN gamma, TNF alpha, IL6) results of a typical standard for Human IFN gamma run with optical density reading at 450 nm.



ARG82862 Human Proinflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IFN gamma, TNF alpha, IL6) standard curve image

ARG82862 Human Proinflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IFN gamma, TNF alpha, IL6) results of a typical standard for Human TNF alpha run with optical density reading at 450 nm.



ARG82862 Human Proinflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IFN gamma, TNF alpha, IL6) standard curve image

ARG82862 Human Proinflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IFN gamma, TNF alpha, IL6) results of a typical standard for Human IL6 run with optical density reading at 450 nm.