ARG83509
arigoPLEX® Human Inflammatory Cytokine Multiplex ELISA Kit (IFN-gamma, IL1 alpha, IL1 beta, IL6, IL8, GM-CSF, TNF-alpha, MCP1)

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

Summary

Product Description	ARG83509 arigoPLEX® Human Inflammatory Cytokine Multiplex ELISA Kit (IFN-gamma, IL1 alpha, IL1 beta, IL6, IL8, GM-CSF, TNF-alpha, MCP1) is an Enzyme Immunoassay kit for the quantification of IFN-gamma, IL1 alpha, IL1 beta, IL6, IL8, GM-CSF, TNF-alpha and MCP1 in serum, plasma and cell culture supernatant . See all Multiplex ELISA kits
Tested Reactivity	Hu
Tested Application	ELISA
Target Name	Inflammatory Cytokine
Conjugation	HRP
Conjugation Note	Substrate: TMB and read at 450 nm.
Sensitivity	IFN-gamma: 7.8 pg/ml IL1 alpha: 15.625 pg/ml IL1 beta: 7.8 pg/ml IL6: 15.625 pg/ml IL8: 13.43 pg/ml GM-CSF: 7.8 pg/ml TNF alpha: 15.625 pg/ml MCP1: 15.625 pg/ml
Sample Type	Serum, plasma and cell culture supernatants.
Standard Range	IFN - gamma: 15.625 - 500 pg/ml IL1 alpha: 31.25 - 1000 pg/ml IL1 beta: 15.625 - 500 pg/ml IL6: 31.25 - 1000 pg/ml IL8: 46.875 - 1500 pg/ml GM - CSF: 15.625 - 500 pg/ml TNF alpha: 31.25 - 1000 pg/ml MCP1: 31.25 - 1000 pg/ml
Sample Volume	50 µl

Application Instructions

Assay Time	4.5 hour

Properties

Form	96 well
Storage instruction	Store components at 4°C or -20°C. Keep microplate wells sealed in a dry bag with desiccants. 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.

Bioinformation

Gene Symbol	IFNG; IL1A; IL1B; IL6; CXCL8; CSF2; TNF; CCL2
Gene Full Name	Interferon Gamma; Interleukin 1 Alpha; Interleukin 1 Beta; Interleukin 6; C-X-C Motif Chemokine Ligand 8; Colony Stimulating Factor 2; Tumor Necrosis Factor; C-C Motif Chemokine Ligand 2
Background	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] IL1 alpha:The protein encoded by this gene is a member of the interleukin 1 cytokine family. This cytokine is a pleiotropic cytokine involved in various immune responses, inflammatory processes, and hematopoiesis. This cytokine is produced by monocytes and macrophages as a proprotein, which is proteolytically processed and released in response to cell injury, and thus induces apoptosis. This gene and eight other interleukin 1 family genes form a cytokine gene cluster on chromosome 2. It has been suggested that the polymorphism of these genes is associated with rheumatoid arthritis and Alzheimer's disease. [provided by RefSeq, Jul 2008] 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. Similarly, IL-1B has been implicated in human osteoarthritis pathogenesis. Patients with severe Coronavirus Disease 2019 (COVID-19) present elevated levels of pro-inflammatory cytokines such as IL-1B in bronchial alveolar lavage fluid samples. The lung damage induced by the Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is to a large extent, a result of the inflammatory response promoted by cytokines such as IL-1B. This gene and eight other interleukin 1 family genes form a cytokine gene cluster on chromosome 2. [provided by RefSeq, Jul 2020] 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 suspectibility to diabetes mellitus and systemic juvenile rheumatoid arthritis. Elevated levels of the encoded protein have been found in virus infections, including COVID-19 (disease caused by SARS-CoV-2). [provided by RefSeq, Aug 2020] IL8:The protein encoded by this gene is a member of the CXC chemokine family and is a major mediator of the inflammatory response. The encoded protein is commonly referred to as interleukin-8 (IL-8). IL-8 is secreted by mononuclear macrophages, neutrophils, eosinophils, T lymphocytes, epithelial cells, and fibroblasts. It functions as a chemotactic factor by guiding the neutrophils to the site of infection. Bacterial and viral products rapidly induce IL-8 expression. IL-8 also participates with other cytokines in the proinflammatory signaling cascade and plays a role in systemic inflammatory response syndrome (SIRS). This gene is believed to play a role in the pathogenesis of the lower respiratory tract infection bronchiolitis, a common respiratory tract disease caused by the respiratory syncytial virus (RSV). The overproduction of this proinflammatory protein is thought to cause the lung inflammation associated with csytic fibrosis. This proinflammatory protein is also suspected of playing a role in coronary artery disease and endothelial dysfunction. This protein is also secreted by tumor cells and promotes tumor migration, invasion, angiogenesis and metastasis. This chemokine is also a potent angiogenic factor. The binding of IL-8 to one of its receptors (IL-8RB/CXCR2) increases the permeability of blood vessels and increasing levels of IL-8 are positively correlated with increased severity of multiple disease outcomes (eg, sepsis). This gene and other members of the CXC chemokine gene family form a gene cluster in a region of chromosome 4q. [provided by RefSeq, May 2020] GM-CSF:The protein encoded by this gene is a cytokine that controls the production, differentiation, and function of granulocytes and macrophages. The active form of the protein is found extracellularly as a homodimer. This gene has been localized to a cluster of related genes at chromosome region 5q31,

which is known to be associated with interstitial deletions in the 5q- syndrome and acute myelogenous leukemia. Other genes in the cluster include those encoding interleukins 4, 5, and 13. This gene plays a role in promoting tissue inflammation. Elevated levels of cytokines, including the one produced by this gene, have been detected in SARS-CoV-2 infected patients that develop acute respiratory distress syndrome. Mice deficient in this gene or its receptor develop pulmonary alveolar proteinosis. [provided by RefSeq, Aug 2020]

TNF-alpha:This gene encodes a multifunctional proinflammatory cytokine that belongs to the tumor necrosis factor (TNF) superfamily. This cytokine is mainly secreted by macrophages. It can bind to, and thus functions through its receptors TNFRSF1A/TNFR1 and TNFRSF1B/TNFBR. This cytokine is involved in the regulation of a wide spectrum of biological processes including cell proliferation, differentiation, apoptosis, lipid metabolism, and coagulation. This cytokine has been implicated in a variety of diseases, including autoimmune diseases, insulin resistance, psoriasis, rheumatoid arthritis ankylosing spondylitis, tuberculosis, autosomal dominant polycystic kidney disease, and cancer. Mutations in this gene affect susceptibility to cerebral malaria, septic shock, and Alzheimer disease. Knockout studies in mice also suggested the neuroprotective function of this cytokine. [provided by RefSeq, Aug 2020]

MCP1:This gene is one of several cytokine genes clustered on the q-arm of chromosome 17. Chemokines are a superfamily of secreted proteins involved in immunoregulatory and inflammatory processes. The superfamily is divided into four subfamilies based on the arrangement of N-terminal cysteine residues of the mature peptide. This chemokine is a member of the CC subfamily which is characterized by two adjacent cysteine residues. This cytokine displays chemotactic activity for monocytes and basophils but not for neutrophils or eosinophils. It has been implicated in the pathogenesis of diseases characterized by monocytic infiltrates, like psoriasis, rheumatoid arthritis and atherosclerosis. It binds to chemokine receptors CCR2 and CCR4. Elevated expression of the encoded protein is associated with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection. [provided by RefSeq, Aug 2020]

Function

IFN gamma:Participates in the regulation of hematopoietic stem cells during development and under homeostatic conditions by affecting their development, quiescence, and differentiation. [UniProt]

IL1 alpha:In addition to its role as a danger signal, which occurs when the cytokine is passively released by cell necrosis, directly senses DNA damage and acts as a signal for genotoxic stress without loss of cell integrity. [UniProt]

IL1 beta:Acts as a sensor of S.pyogenes infection in skin: cleaved and activated by pyogenes SpeB protease, leading to an inflammatory response that prevents bacterial growth during invasive skin infection. [UniProt]

IL6:Through activation of IL6ST-YAP-NOTCH pathway, induces inflammation-induced epithelial regeneration (By similarity). [UniProt]

IL8:G-protein heterotrimer (alpha, beta, gamma subunits) constitutively binds to CXCR1/CXCR2 receptor and activation by IL8 leads to beta and gamma subunits release from Galpha (GNAI2 in neutrophils) and activation of several downstream signaling pathways including PI3K and MAPK pathways. [UniProt]

GM-CSF:Cytokine that stimulates the growth and differentiation of hematopoietic precursor cells from various lineages, including granulocytes, macrophages, eosinophils and erythrocytes.. [UniProt]

TNF-alpha:Plays a role in angiogenesis by inducing VEGF production synergistically with IL1B and IL6. Promotes osteoclastogenesis and therefore mediates bone resorption (By similarity). [UniProt]

MCP1:May be involved in the recruitment of monocytes into the arterial wall during the disease process of atherosclerosis. [UniProt]

Highlight

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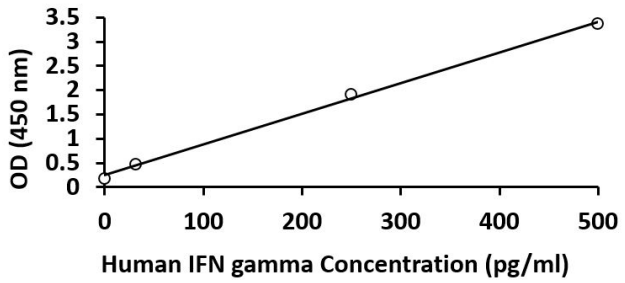
Related news:
HMGB1 in inflammation
Inflammatory Cytokines
Exploring Antiviral Immune Response
New ELISA data calculation tool:
Simplify the ELISA analysis by GainData

Images

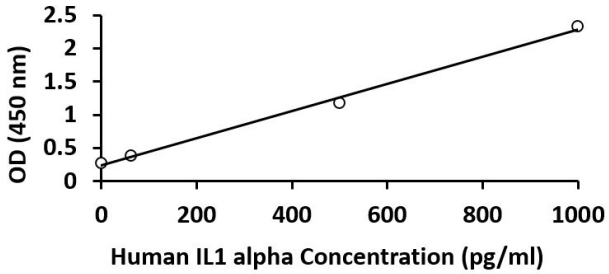
	1	2	3	4	5	6	7	8	9	10	11	12
A	IFN-r	IFN-r	IFN-r	IFN-r	IFN-r	IFN-r	IFN-r	IFN-r	IFN-r	IFN-r	IFN-r	IFN-r
B	IL-1α	IL-1α	IL-1α	IL-1α	IL-1α	IL-1α	IL-1α	IL-1α	IL-1α	IL-1α	IL-1α	IL-1α
C	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β
D	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6
E	IL-8	IL-8	IL-8	IL-8	IL-8	IL-8	IL-8	IL-8	IL-8	IL-8	IL-8	IL-8
F	GM-CSF	GM-CSF	GM-CSF	GM-CSF	GM-CSF	GM-CSF	GM-CSF	GM-CSF	GM-CSF	GM-CSF	GM-CSF	GM-CSF
G	TNF-a	TNF-a	TNF-a	TNF-a	TNF-a	TNF-a	TNF-a	TNF-a	TNF-a	TNF-a	TNF-a	TNF-a
H	MCP1	MCP1	MCP1	MCP1	MCP1	MCP1	MCP1	MCP1	MCP1	MCP1	MCP1	MCP1

Antibodies Coating Pattern In Microtiter Plate of ARG83509 arigoPLEX® Human Inflammatory Cytokine Multiplex ELISA Kit (IFN-gamma, IL1 alpha, IL1 beta, IL6, IL8, GM-CSF, TNF-alpha, MCP1)



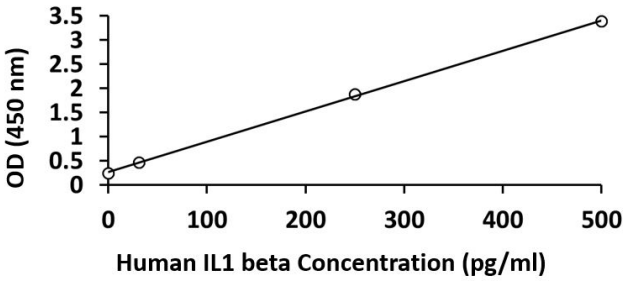
ARG83509 arigoPLEX® Human Inflammatory Cytokine Multiplex ELISA Kit standard curve image

ARG83509 arigoPLEX® Human Inflammatory Cytokine Multiplex ELISA Kit results of a typical standard for Human IFN-gamma run with optical density reading at 450 nm.



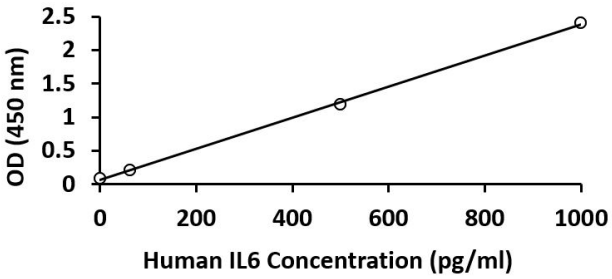
ARG83509 arigoPLEX® Human Inflammatory Cytokine Multiplex ELISA Kit standard curve image

ARG83509 arigoPLEX® Human Inflammatory Cytokine Multiplex ELISA Kit results of a typical standard for Human IL1 alpha run with optical density reading at 450 nm.



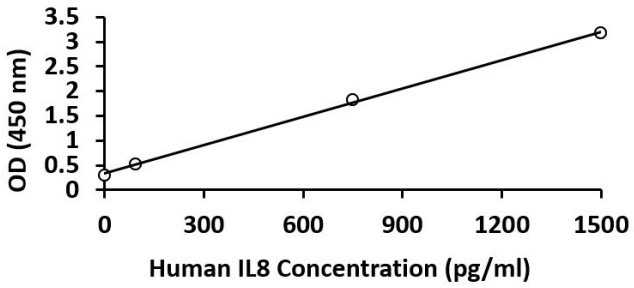
ARG83509 arigoPLEX® Human Inflammatory Cytokine Multiplex ELISA Kit standard curve image

ARG83509 arigoPLEX® Human Inflammatory Cytokine Multiplex ELISA Kit results of a typical standard for Human IL1 beta run with optical density reading at 450 nm.



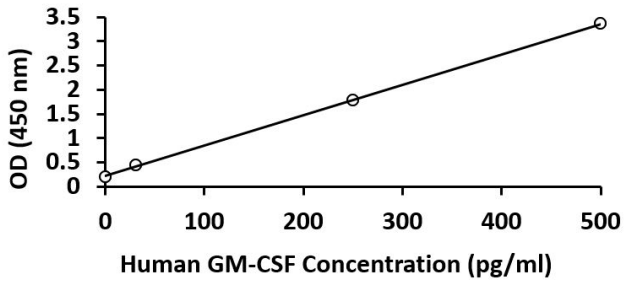
ARG83509 arigoPLEX® Human Inflammatory Cytokine Multiplex ELISA Kit standard curve image

ARG83509 arigoPLEX® Human Inflammatory Cytokine Multiplex ELISA Kit results of a typical standard for Human IL6 run with optical density reading at 450 nm.



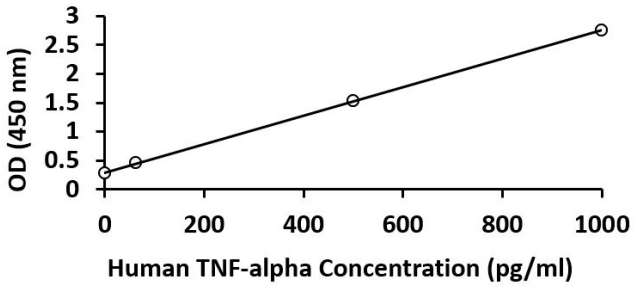
ARG83509 arigoPLEX® Human Inflammatory Cytokine Multiplex ELISA Kit standard curve image

ARG83509 arigoPLEX® Human Inflammatory Cytokine Multiplex ELISA Kit results of a typical standard for Human IL8 run with optical density reading at 450 nm.



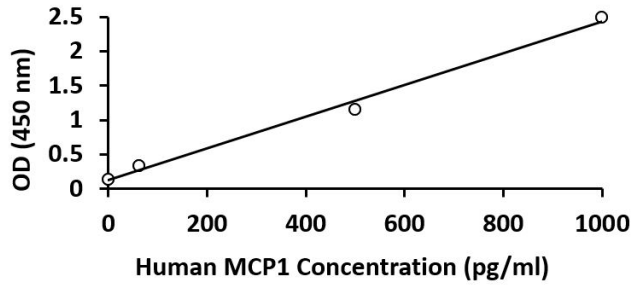
ARG83509 arigoPLEX® Human Inflammatory Cytokine Multiplex ELISA Kit standard curve image

ARG83509 arigoPLEX® Human Inflammatory Cytokine Multiplex ELISA Kit results of a typical standard for Human GM-CSF run with optical density reading at 450 nm.



ARG83509 arigoPLEX® Human Inflammatory Cytokine Multiplex ELISA Kit standard curve image

ARG83509 arigoPLEX® Human Inflammatory Cytokine Multiplex ELISA Kit results of a typical standard for Human TNF alpha run with optical density reading at 450 nm.



ARG83509 arigoPLEX® Human Inflammatory Cytokine Multiplex ELISA Kit standard curve image

ARG83509 arigoPLEX® Human Inflammatory Cytokine Multiplex ELISA Kit results of a typical standard for Human MCP1 run with optical density reading at 450 nm.