

ARG83004 arigoPLEX® Rat Inflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IL6, IL10, TNF alpha)

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

Component

Cat. No.	Component Name	Package	Temp
ARG83004-01	Antibody Coated Microplate	8 X 12 strips	4°C
ARG83004-02	Standards Mixture	2 vials	4°C
ARG83004-03	10X Antibody Conjugate Mixture	1.2 ml	≤ -20°C
ARG83004-04	40X HRP-Streptavidin concentrate	300 µl	4°C
ARG83004-05	Standard/Sample Diluent Buffer	30 ml	4°C
ARG83004-06	Antibody Diluent Buffer	50 ml	4°C
ARG83004-07	Serum Diluent Buffer	10 ml	4°C
ARG83004-08	10X Wash Buffer	2 X 50 ml	4°C
ARG83004-09	TMB substrate	12 ml	4°C (protect from light)
ARG83004-10	STOP solution	6 ml	4°C
ARG83004-11	Plate sealer	3 strips	Room temperature

Summary

Product Description	ARG83004 arigoPLEX® Rat Inflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IL6, IL10, TNF alpha) is an Enzyme Immunoassay kit for the semi-quantification of Rat Inflammatory Cytokine (IL1 beta, IL6, IL10, TNF alpha) in serum, plasma and cell culture supernatants. See all Multiplex ELISA kits
Tested Reactivity	Rat
Tested Application	ELISA
Target Name	IL1 beta, IL6, IL10, TNF alpha
Conjugation	HRP
Conjugation Note	Substrate: TMB and read at 450 nm.
Sensitivity	IL1 beta: 31.3 pg/ml IL6: 62.5 pg/ml IL10: 31.3 pg/ml TNF alpha: 31.3 pg/ml
Sample Type	Serum, plasma and cell culture supernatants.

Standard Range	IL1 beta: 62.5 - 4000 pg/ml IL6: 125 - 8000 pg/ml IL10: 62.5 - 4000 pg/ml TNF alpha: 62.5 - 4000 pg/ml
Sample Volume	Serum and plasma: 25 µl; cell culture supernatants: 50 µl.
Alternate Names	IL1 beta: Interleukin-1 beta; IL1-BETA; IL-1; IL-1 beta; Catabolin; IL1F2 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 IL10: IL10A; GVHDS; TGIF; IL-10; Cytokine synthesis inhibitory factor; CSIF; Interleukin-10 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; Human Proinflammatory Cytokine Multiplex; IL6; Multiplex ELISA; Cytokine detection; Cytokine profiling; Proinflammatory cytokines; Inflammatory response; Human cytokines; Immunology; Life sciences; Research kit; High sensitivity; High throughput; Multiplex assay;

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.

Bioinformation

Gene Symbol	Il1b; Il6; Il10; Tnf
Gene Full Name	Interleukin 1, beta Interleukin 6 Interleukin 10 Tumor necrosis factor

Background

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]

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]

IL10: The protein encoded by this gene is a cytokine produced primarily by monocytes and to a lesser extent by lymphocytes. This cytokine has pleiotropic effects in immunoregulation and inflammation. It down-regulates the expression of Th1 cytokines, MHC class II Ags, and costimulatory molecules on macrophages. It also enhances B cell survival, proliferation, and antibody production. This cytokine can block NF-kappa B activity, and is involved in the regulation of the JAK-STAT signaling pathway. Knockout studies in mice suggested the function of this cytokine as an essential immunoregulator in the intestinal

tract. Mutations in this gene are associated with an increased susceptibility to HIV-1 infection and rheumatoid arthritis.[provided by RefSeq, May 2011]

TNF alpha: TNF alpha is 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/TNFB. 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, and cancer. Knockout studies in mice also suggested the neuroprotective function of this cytokine. [provided by RefSeq, Jul 2008]

Function

IL1 beta: Potent Inflammatory 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]

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]

IL10: Inhibits the synthesis of a number of cytokines, including IFN-gamma, IL-2, IL-3, TNF and GM-CSF produced by activated macrophages and by helper T-cells. [UniProt]

TNF alpha: Cytokine that binds to TNFRSF1A/TNFR1 and TNFRSF1B/TNFB. 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).

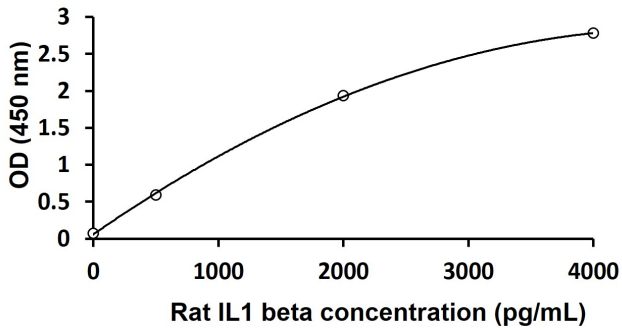
The TNF intracellular domain (ICD) form induces IL12 production in dendritic cells. [UniProt]

Highlight

Images

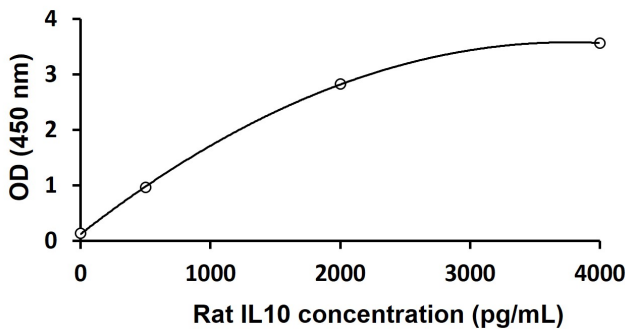
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
A.	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β
B.	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6
C.	IL-10	IL-10	IL-10	IL-10	IL-10	IL-10	IL-10	IL-10	IL-10	IL-10	IL-10	IL-10
D.	TNFα	TNFα	TNFα	TNFα	TNFα	TNFα	TNFα	TNFα	TNFα	TNFα	TNFα	TNFα
E.	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β	IL-1β
F.	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6
G.	IL-10	IL-10	IL-10	IL-10	IL-10	IL-10	IL-10	IL-10	IL-10	IL-10	IL-10	IL-10
H.	TNFα	TNFα	TNFα	TNFα	TNFα	TNFα	TNFα	TNFα	TNFα	TNFα	TNFα	TNFα

Antibodies Coating Pattern In Microtiter Plate of ARG83004 arigoPLEX® Rat Inflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IL6, IL10, TNF alpha)



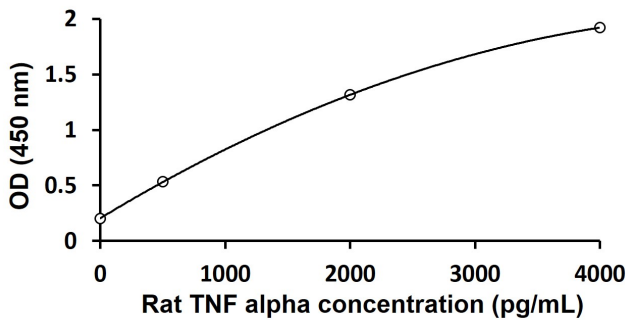
ARG83004 arigoPLEX® Rat Inflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IL6, IL10, TNF alpha) standard curve image

ARG83004 arigoPLEX® Rat Inflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IL6, IL10, TNF alpha) results of a typical standard for Rat IL1 beta run with optical density reading at 450 nm.



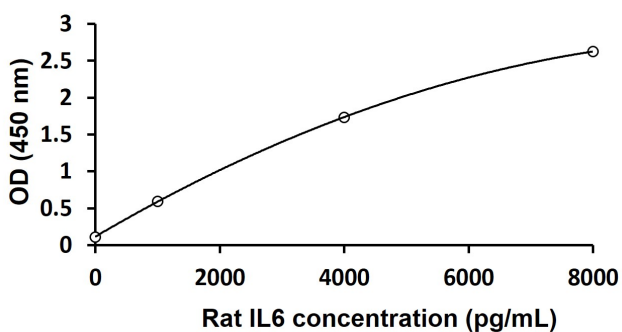
ARG83004 arigoPLEX® Rat Inflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IL6, IL10, TNF alpha) standard curve image

ARG83004 arigoPLEX® Rat Inflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IL6, IL10, TNF alpha) results of a typical standard for Rat IL10 run with optical density reading at 450 nm.



ARG83004 arigoPLEX® Rat Inflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IL6, IL10, TNF alpha) standard curve image

ARG83004 arigoPLEX® Rat Inflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IL6, IL10, TNF alpha) results of a typical standard for Rat TNF alpha run with optical density reading at 450 nm.



ARG83004 arigoPLEX® Rat Inflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IL6, IL10, TNF alpha) standard curve image

ARG83004 arigoPLEX® Rat Inflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IL6, IL10, TNF alpha) results of a typical standard for Rat IL6 run with optical density reading at 450 nm.