

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

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

Summary

Product Description	ARG83004 arigoPLEX® Rat Inflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IL6, IL10, TNF alpha) is an Enzyme Immunoassay kit for the 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	Inflammatory Cytokine
Conjugation	HRP
Conjugation Note	Substrate: TMB and read at 450 nm.
Sensitivity	IL1 beta: 62.5 pg/ml IL6: 125 pg/ml IL10: 62.5 pg/ml TNF alpha: 62.5 pg/ml
Sample Type	Serum, plasma and cell culture supernatants.
Standard Range	IL1 beta: 125 - 4000 pg/ml IL6: 250 - 8000 pg/ml IL10: 125 - 4000 pg/ml TNF alpha: 125 - 4000 pg/ml
Sample Volume	25 µl

Application Instructions

Assay Time	4.5 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. 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 susceptibility 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]

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 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/TNFR. 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]

Function

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]

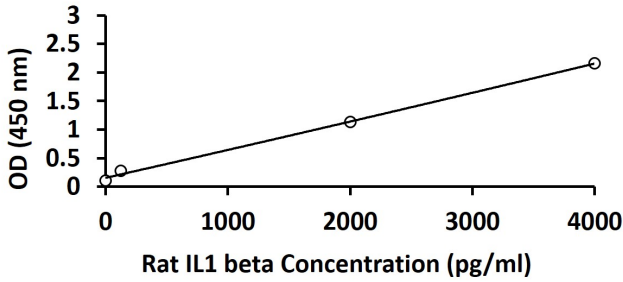
IL10:Major immune regulatory cytokine that acts on many cells of the immune system where it has profound anti-inflammatory functions, limiting excessive tissue disruption caused by inflammation. Mechanistically, IL10 binds to its heterotetrameric receptor comprising IL10RA and IL10RB leading to JAK1 and STAT2-mediated phosphorylation of STAT3. [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]

Highlight

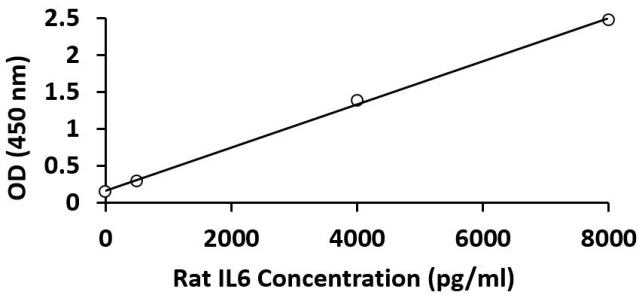
	1	2	3	4	5	6	7	8	9	10	11	12
A	IL-1 β	IL-1 β	IL-1 β	IL-1 β	IL-1 β	IL-1 β	IL-1 β	IL-1 β	IL-1 β	IL-1 β	IL-1 β	IL-1 β
B	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6	IL-6
C	IL-10	IL-10	IL-10	IL-10	IL-10	IL-10	IL-10	IL-10	IL-10	IL-10	IL-10	IL-10
D	TNF- α	TNF- α	TNF- α	TNF- α	TNF- α	TNF- α	TNF- α	TNF-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

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



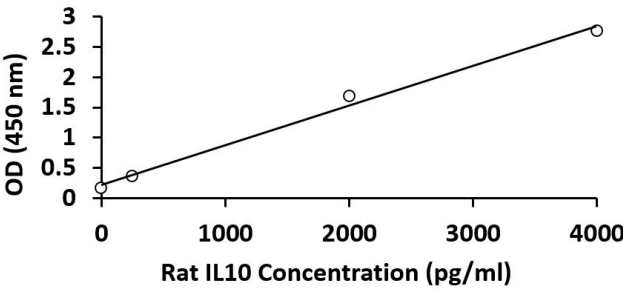
ARG83004 arigoPLEX® Rat Inflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IL6, IL10, TNF alpha) standard curve image

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.



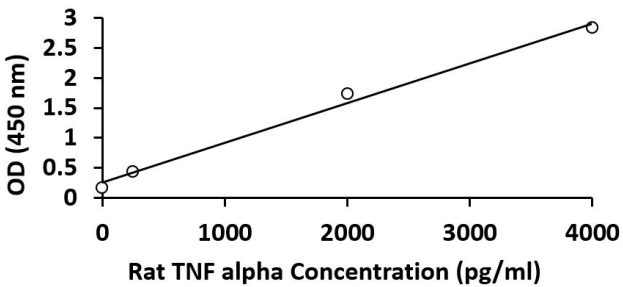
ARG83004 arigoPLEX® Rat Inflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IL6, IL10, TNF alpha) standard curve image

ARG83004 arigoPLEX® Rat Inflammatory Cytokine Multiplex ELISA Kit (IL1 beta, IL6, IL10, TNF alpha) results of a typical standard for Rat IL6 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.