Datasheet for ABIN411292

IL1A ELISA Kit

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Overview

Quantity:	96 tests
Target:	IL1A
Binding Specificity:	AA 115-270
Reactivity:	Rat
Method Type:	Sandwich ELISA
Detection Range:	4.69-300 pg/mL
Minimum Detection Limit:	4.69 pg/mL
Application:	ELISA

Product Details

Purpose:	Sandwich High Sensitivity ELISA kit for Quantitative Detection of Rat IL-1 alpha
Brand:	PicoKine™
Sample Type:	Cell Culture Supernatant, Serum
Analytical Method:	Quantitative
Detection Method:	Colorimetric
Immunogen:	Expression system for standard: E.coli Immunogen sequence: S115-S270
Specificity:	Expression system for standard: E.coli,S115-S270
Cross-Reactivity (Details):	There is no detectable cross-reactivity with other relevant proteins.
Sensitivity:	<0.5pg/mL

Product Details

Material not included:	Microplate reader in standard size. Automated plate washer. Adjustable pipettes and pipette tips. Multichannel pipettes are recommended in the condition of large amount of samples in the detection. Clean tubes and Eppendorf tubes. Washing buffer (neutral PBS or TBS). Preparation of 0.01M TBS: Add 1.2g Tris, 8.5g Nacl

Target Details

Target:	IL1A
Alternative Name:	IL1A (IL1A Products)
Background:	Protein Function: Produced by activated macrophages, IL-1 stimulates thymocyte proliferation by inducing IL-2 release, B-cell maturation and proliferation, and fibroblast growth factor activity. IL-1 proteins are involved in the inflammatory response, being identified as endogenous pyrogens, and are reported to stimulate the release of prostaglandin and collagenase from synovial cells. Background: Interleukin-1 alpha(IL-1 alpha) and interleukin-1 beta(IL-1 beta) are two biochemically distinct, but distantly related, polypeptidic cytokines that play a key role in inflammation, immunologic reactions, and tissue repair. IL-1 alpha has been implicated in the pathogenesis of infectious, autoimmune and inflammatory diseases. Recently, it has been shown that IL-1 alpha is identical to hematopoietin 1, which is described as a hematopoietic growth factor acting on early progenitor cells in synergy with other hematopoietic growth factors.1 The human interleukin 1 alpha gene is assigned to chromosome 2. Genetic polymorphisms at interleukin(IL)-1alpha and IL-1beta have been recently suggested to be associated with severity of adult periodontitis. The murine IL-1 alpha and IL-1 beta genes encode structurally and evolutionarily related cytokines that exert a regulatory role in numerous physiological processes including hemopoiesis. The standard product used in this kit is recombinant rat IL-1alpha with the molecular mass of 18 kDa. Synonyms: Interleukin-1 alpha,IL-1 alpha,Il1a, Full Gene Name: Interleukin-1 alpha Cellular Localisation: Secreted. The lack of a specific hydrophobic segment in the precursor sequence suggests that IL-1 is released by damaged cells or is secreted by a mechanism differing from that used for other secretory proteins.
Gene ID:	24493
UniProt:	P16598
Pathways:	NF-kappaB Signaling, Autophagy, Cancer Immune Checkpoints

Application Details

Application Notes:	Before using Kit, spin tubes and bring down all components to bottom of tube. Duplicate well assay was recommended for both standard and sample testing.
Plate:	Pre-coated
Protocol:	rat IL-1 alpha ELISA Kit was based on standard sandwich enzyme-linked immune-sorbent assay technology. A monoclonal antibody from mouse specific for IL-1 alpha has been precoated onto 96-well plates. Standards (E.coli,S115-S270) and test samples are added to the wells, a biotinylated detection polyclonal antibody from goat specific for IL-1 alpha is added subsequently and then followed by washing with PBS or TBS buffer. Avidin-Biotin-Peroxidase Complex was added and unbound conjugates were washed away with PBS or TBS buffer. HRP substrate TMB was used to visualize HRP enzymatic reaction. TMB was catalyzed by HRP to produce a blue color product that changed into yellow after adding acidic stop solution. The density of yellow is proportional to the rat IL-1 alpha amount of sample captured in plate.
Assay Procedure:	Aliquot 0.1 mL per well of the 300pg/mL, 150pg/mL, 75pg/mL, 37.5pg/mL, 18.8pg/mL, 9.4pg/mL, 4.69pg/mL rat IL-1 alpha standard solutions into the precoated 96-well plate. Add 0.1 mL of the sample diluent buffer into the control well (Zero well). Add 0.1 mL of each properly diluted sample of rat cell culture supernates or serum to each empty well. See "Sample Dilution Guideline" above for details. We recommend that each rat IL-1 alpha standard solution and each sample is measured in duplicate.
Assay Precision:	• Sample 1: n=16, Mean(pg/ml): 45, Standard deviation: 1.89, CV(%): 4.2 • Sample 2: n=16, Mean(pg/ml): 137, Standard deviation: 6.58, CV(%): 4.8 • Sample 3: n=16, Mean(pg/ml): 211, Standard deviation: 10.76, CV(%): 5.1, • Sample 1: n=24, Mean(pg/ml): 49, Standard deviation: 2.646, CV(%): 5.4 • Sample 2: n=24, Mean(pg/ml): 145, Standard deviation: 8.99, CV(%): 6.2 • Sample 3: n=24, Mean(pg/ml): 230, Standard deviation: 15.41, CV(%): 6.7
Restrictions:	For Research Use only

Handling

Handling Advice:	Avoid multiple freeze-thaw cycles.
Storage:	-20 °C,4 °C
Storage Comment:	Store at 4°C for 6 months, at -20°C for 12 months. Avoid multiple freeze-thaw cycles
Expiry Date:	12 months

Publications

Product cited in:

Zhang, Xu, Hu, Wu, Qin, Zhang: "Anti-inflammatory effects of Lefty-1 in renal tubulointerstitial inflammation via regulation of the NF-κB pathway." in: **International journal of molecular medicine**, Vol. 41, Issue 3, pp. 1293-1304, (2018) (PubMed).

Rizvi, Fayazuddin, Singh, Naeem, Moin, Akhtar, Kumar et al.: "Cytokine Attenuation and Free Radical Scavenging Activity of a New Flavanone7,4'-Dihydroxy-3",3"-Dimethyl -(5,6-Pyrano-2"-One)- 8- (3,3-Dimethyl Allyl)- Isolated from Mallotus philippensis: ..." in: **PLoS ONE**, Vol. 11, Issue 12, pp. e0167294, (2017) (PubMed).

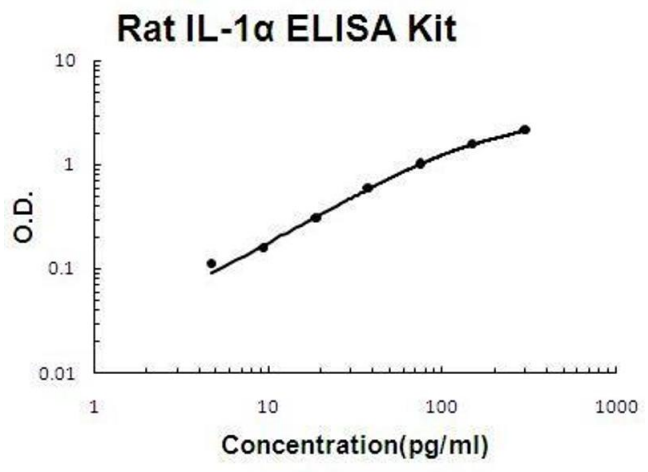
Rizvi, Fayazuddin, Singh, Syed, Moin, Akhtar, Kumar: "Anti-inflammatory effect of Fumaria parviflora leaves based on TNF-α, IL-1, IL-6 and antioxidant potential." in: **Avicenna journal of phytomedicine**, Vol. 7, Issue 1, pp. 37-45, (2017) (PubMed).

Mao, Sun, Mao, Wang, Zhang, Zhou, Rahman, Ye: "Inhibitory Effects of Angelica Polysaccharide on Activation of Mast Cells." in: **Evidence-based complementary and alternative medicine : eCAM**, Vol. 2016, pp. 6063475, (2016) (PubMed).

Rizvi, Fayazuddin, Shariq, Singh, Moin, Akhtar, Kumar: "Anti-inflammatory activity of roots of Cichorium intybus due to its inhibitory effect on various cytokines and antioxidant activity." in: **Ancient science of life**, Vol. 34, Issue 1, pp. 44-9, (2015) (PubMed).

There are more publications referencing this product on: Product page

Images



ELISA

Image 1. Rat IL-1 alpha PicoKine ELISA Kit standard curve