Datasheet for ABIN1672802

IL-27 ELISA Kit

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Overview

Quantity:	96 tests
Target:	IL-27 (IL27)
Binding Specificity:	AA 21-229, AA 29-243
Reactivity:	Human
Method Type:	Sandwich ELISA
Detection Range:	156-10000 pg/mL
Minimum Detection Limit:	156 pg/mL
Application:	ELISA

Product Details

Purpose:	Sandwich High Sensitivity ELISA kit for Quantitative Detection of Human IL-27
Brand:	PicoKine™
Sample Type:	Cell Culture Supernatant, Serum, Plasma (heparin), Plasma (EDTA)
Analytical Method:	Quantitative
Detection Method:	Colorimetric
Immunogen:	Expression system for standard: NSO Immunogen sequence: EBI3(R21-K229)+P28(F29-P243)
Specificity:	Expression system for standard: NSO Immunogen sequence: EBI3(R21-K229)+P28(F29-P243)
Cross-Reactivity (Details):	There is no detectable cross-reactivity with other relevant proteins.

Product Details

Sensitivity:	<10pg/mL
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:	IL-27 (IL27)
Alternative Name:	IL27 (IL27 Products)
Background:	Protein Function: Associates with EBI3 to form the IL-27 interleukin, a heterodimeric cytokine which functions in innate immunity. IL-27 has pro- and anti-inflammatory properties, that can regulate T- helper cell development, suppress T-cell proliferation, stimulate cytotoxic T-cell activity, induce isotype switching in B-cells, and that has diverse effects on innate immune cells. Among its target cells are CD4 T-helper cells which can differentiate in type 1 effector cells (TH1), type 2 effector cells (TH2) and IL17 producing helper T-cells (TH17). It drives rapid clonal expansion of naive but not memory CD4 T-cells. It also strongly synergizes with IL-12 to trigger interferon-gamma/IFN-gamma production of naive CD4 T-cells, binds to the cytokine receptor WSX-1/TCCR which appears to be required but not sufficient for IL-27-mediated signal transduction. IL-27 potentiate the early phase of TH1 response and suppress TH2 and TH17 differentiation. It induces the differentiation of TH1 cells via two distinct pathways, p38 MAPK/TBX21- and ICAM1/ITGAL/ERK-dependent pathways. It also induces STAT1, STAT3, STAT4 and STAT5 phosphorylation and activates TBX21/T-Bet via STAT1 with resulting IL12RB2 up- regulation, an event crucial to TH1 cell commitment. It suppresses the expression of GATA3, the inhibitor TH1 cells development. In CD8 T-cells, it activates STATs as well as GZMB. IL-27 reveals to be a potent inhibitor of TH17 cell development and of IL-17 production. Indeed IL27 alone is also able to inhibit the production of IL17 by CD4 and CD8 T-cells. While IL-27 suppressed the development of proinflammatory Th17 cells via STAT1, it inhibits the development of anti-inflammatory inducible regulatory T-cells, iTreg, independently of STAT1. IL-27 has also an effect on cytokine production, it suppresses proinflammatory cytokine production such as IL2, IL4, IL5 and IL6 and activates suppressors of cytokine signaling such as SOCS1 and SOCS3. Apart from suppression of cytokine production, IL-27 also antagonizes the effects of some cytokines such as IL6 through direct effects on T- cells. Another important role of IL-27 is its antitumor activity as well as its antiangiogenic activity with activation of production of antiangiogenic chemokines such as IP-10/CXCL10 and MIG/CXCL9. In vein

Target Details

	endothelial cells, it induces IRF1/interferon regulatory factor 1 and increase the expression of MHC class II transactivator/CIITA with resulting up-regulation of major histocompatibility complex class II. IL-27 also demonstrates antiviral activity with inhibitory properties on HIV-1 replication. . Background: Interleukin-27(IL-27) is a heterodimeric cytokine belonging to the IL-12 family that is composed of two subunits, Epstein-Barr virus(EBV)-induced gene 3(EBI3)(also known as IL-27B) and IL27-p28(known as IL-30). IL-27 is produced by antigen-presenting cells.IL-27 plays an important function in regulating the activity of B- and T-lymphocytes. IL-27, a potent inhibitor of T(H)-17 cell development, may be a useful target for treating inflammatory diseases mediated by these cells. Synonyms: Interleukin-27 subunit alpha,IL-27 subunit alpha,IL-27-A,IL27-A,Interleukin-30,p28,IL27,IL27A, IL30, Full Gene Name: Interleukin-27 subunit alpha Cellular Localisation: Secreted . Does not seem to be secreted without coexpression of EBI3.
Gene ID:	246778
UniProt:	Q8NEV9

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.
Comment:	Sequence similarities: Belongs to the IL-6 superfamily. Tissue Specificity: Expressed in monocytes and in placenta. .
Plate:	Pre-coated
Protocol:	human IL-27 ELISA Kit was based on standard sandwich enzyme-linked immune-sorbent assay technology. A monoclonal antibody from mouse specific for IL-27 has been precoated onto 96-well plates. Standards(NSO, EBI3(R21-K229)+P28(F29-P243)) and test samples are added to the wells, a biotinylated detection polyclonal antibody from goat specific for IL-27 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 human IL-27 amount of sample captured in plate.
Assay Procedure:	Aliquot 0.1 mL per well of the 10000pg/mL, 5000pg/mL, 2500pg/mL, 1250pg/mL, 625pg/mL,

Application Details

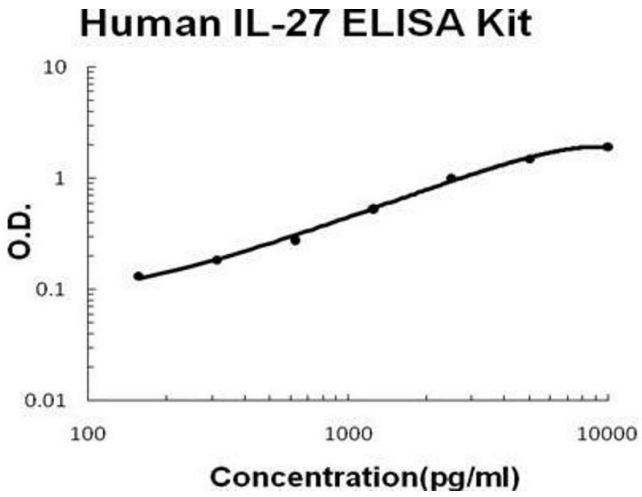
	312pg/mL, 156pg/mL human IL-27 standard solutions into the precoated 96-well plate. Add 0.1 mL of the sample diluent buffer into the control well (Zero well). Add 0.1 mL of each properly diluted sample of human cell culture supernates, serum or plasma(heparin, EDTA) to each empty well. See "Sample Dilution Guideline" above for details. It is recommended that each human IL-27 standard solution and each sample be measured in duplicate.
Assay Precision:	• Sample 1: n=16, Mean(pg/ml): 1375, Standard deviation: 89.4, CV(%): 6.5 • Sample 2: n=16, Mean(pg/ml): 3820, Standard deviation: 202.5, CV(%): 5.3 • Sample 3: n=16, Mean(pg/ml): 6188, Standard deviation: 278.5, CV(%): 4.5, • Sample 1: n=24, Mean(pg/ml): 1461, Standard deviation: 105.2, CV(%): 7.2 • Sample 2: n=24, Mean(pg/ml): 4208, Standard deviation: 256.7, CV(%): 6.1 • Sample 3: n=24, Mean(pg/ml): 6452, Standard deviation: 367.8, CV(%): 5.7
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:	Gungor, Unal, Guclu, Gezer, Eyileten, Guzel, Altunoren, Erken, Oguz, Kocyigit, Yilmaz: "IL-33 and ST2 levels in chronic kidney disease: Associations with inflammation, vascular abnormalities, cardiovascular events, and survival." in: **PLoS ONE**, Vol. 12, Issue 6, pp. e0178939, (2017) (PubMed).



ELISA

Image 1. Human IL-27 PicoKine ELISA Kit standard curve