Datasheet for ABIN1672803

IL-27 ELISA Kit

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Overview

Quantity:	96 tests
Target:	IL-27 (IL27)
Binding Specificity:	AA 29-234
Reactivity:	Mouse
Method Type:	Sandwich ELISA
Detection Range:	15.6-1000 pg/mL
Minimum Detection Limit:	15.6 pg/mL
Application:	ELISA

Product Details

Purpose:	Sandwich High Sensitivity ELISA kit for Quantitative Detection of Mouse IL-27 p28
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: F29-S234
Specificity:	Expression system for standard: NSO Immunogen sequence: F29-S234
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. .

Target Details

	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. By genomic sequence analysis, the IL27 p28 gene was mapped to chromosome 16p11. L-27 plays an important function in regulating the activity of B- and T-lymphocytes. The effects of IL-27 are eliciting by its interaction with a specific cell-surface receptor complex composed of two proteins known as IL27R and gp130. Synonyms: Interleukin-27 subunit alpha,IL-27 subunit alpha,IL-27-A,IL27-A,p28,Il27,Il27a, Full Gene Name: Interleukin-27 subunit alpha Cellular Localisation: Secreted . Poorly secreted without coexpression of EBI3.
Gene ID:	246779
UniProt:	Q8K3I6

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:	Tissue Specificity: Expressed in macrophages and dendritic cells. .
Plate:	Pre-coated
Protocol:	mouse IL-27 p28 ELISA Kit is based on standard sandwich enzyme-linked immune-sorbent assay technology. A monoclonal antibody from rat specific for IL-27 p28 has been precoated onto 96-well plates. Standards(NSO, F29-S234) and test samples are added to the wells, a biotinylated detection polyclonal antibody from goat specific for IL-27 p28 is added subsequently and then followed by washing with PBS or TBS buffer. Avidin-Biotin-Peroxidase Complex is added and unbound conjugates are washed away with PBS or TBS buffer. HRP substrate TMB is used to visualize HRP enzymatic reaction. TMB is 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 mouse IL-27 p28 amount of sample captured in plate.
Assay Procedure:	Aliquot 0.1 mL per well of the 1000pg/mL, 500pg/mL, 250pg/mL, 125pg/mL, 62.5pg/mL, 31.2pg/mL, 15.6pg/mL mouse IL-27 p28 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 mouse cell culture supernates, serum or plasma(heparin, EDTA) to each empty well. See "Sample Dilution Guideline" above for details. It is recommended that each mouse IL-27 p28 standard solution and each sample be measured in duplicate.

Application Details

Assay Precision:	• Sample 1: n=16, Mean(pg/ml): 103, Standard deviation: 5.87, CV(%): 5.7 • Sample 2: n=16, Mean(pg/ml): 368, Standard deviation: 25.76, CV(%): 7 • Sample 3: n=16, Mean(pg/ml): 556, Standard deviation: 36.7, CV(%): 6.6, • Sample 1: n=24, Mean(pg/ml): 127, Standard deviation: 8.13, CV(%): 6.4 • Sample 2: n=24, Mean(pg/ml): 407, Standard deviation: 32.97, CV(%): 8.1 • Sample 3: n=24, Mean(pg/ml): 674, Standard deviation: 51.9, CV(%): 7.7
Restrictions:	For Research Use only

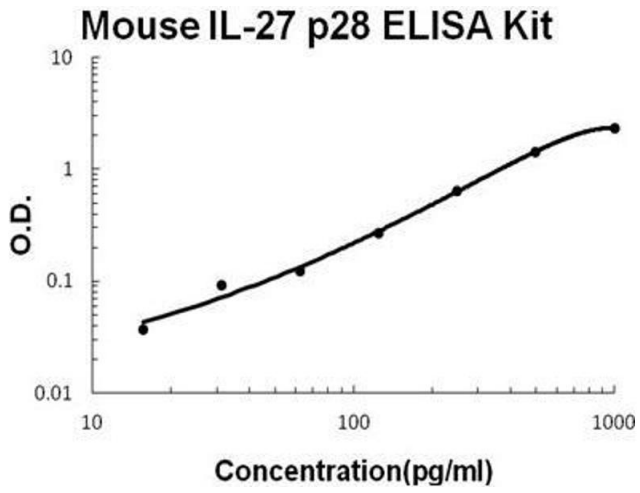
Handling

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:	Du, Chen, Wang, Wen, Wang, Wang, Kan, Wei, Zhao: "VEGF-D-induced draining lymphatic enlargement and tumor lymphangiogenesis promote lymph node metastasis in a xenograft model of ovarian carcinoma." in: **Reproductive biology and endocrinology : RB&E**, Vol. 12, pp. 14, (2014) (PubMed).

Images



ELISA

Image 1. Mouse IL-27 p28 PicoKine ELISA Kit standard curve