abcam

Product datasheet

Human IL-27 ELISA Kit (IL-27 p28) ab267812

Recombinant SimpleStep ELISA

5 Images

Overview

Product name	Human IL-27 ELISA Kit (IL-27 p28)
Detection method	Colorimetric
Precision	

Intra-assay

Sample	n	Mean	SD	CV%
Serum	8			4%

Inter-assay

Sample	n	Mean	SD	CV%
Serum	3			9.1%

Sample type	Serum, Cell culture media, Hep Plasma, EDTA Plasma
Assay type	Sandwich (quantitative)
Sensitivity	61.02 pg/ml
Range	125 pg/ml - 8000 pg/ml
Recovery	

Sample specific recovery

Sample type	Average %	Range
Serum	123	119% - 125%
Cell culture media	116	115% - 118%
Hep Plasma	97	88% - 106%
EDTA Plasma	97	84% - 112%
Cit plasma	98	83% - 111%

Assay time	1h 30m
Assay duration	One step assay

Species reactivity	**Reacts with:** Human

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Product overview

Human IL-27 ELISA Kit (IL-27 p28) (ab267812) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of IL-27 (IL-27 p28) protein in cell culture media, edta plasma, hep plasma, and serum. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human IL-27 (IL-27 p28) with 61.02 pg/ml sensitivity.

SimpleStep ELISA® technology employs capture antibodies conjugated to an affinity tag that is recognized by the monoclonal antibody used to coat our SimpleStep ELISA® plates. This approach to sandwich ELISA allows the formation of the antibody-analyte sandwich complex in a single step, significantly reducing assay time. See the SimpleStep ELISA® protocol summary in the image section for further details. Our SimpleStep ELISA® technology provides several benefits:

- Single-wash protocol reduces assay time to 90 minutes or less
- High sensitivity, specificity and reproducibility from superior antibodies
- Fully validated in biological samples
- 96-wells plate breakable into 12 x 8 wells strips

A 384-well SimpleStep ELISA® microplate (**ab203359**) is available to use as an alternative to the 96-well microplate provided with SimpleStep ELISA® kits.

Notes

IL-27 is a heterodimeric cytokine involved in innate immunity. IL-27 is involved in T cell differentiation and development, along with suppression of T cell proliferation. IL-27 also functions in isotype switching in B cells and has anti-viral properties during HIV-1 replication.

Platform

Pre-coated microplate (12 x 8 well strips)

Properties

Storage instructions

Store at +4°C. Please refer to protocols.

Components	1 x 96 tests
10X Human IL-27 (IL-27 p28) Capture Antibody	1 x 600µl
10X Human IL-27 (IL-27 p28) Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml
Antibody Diluent 4BI	1 x 6ml
Human IL-27 (IL-27 p28) Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit
Sample Diluent 50BS	1 x 20ml
Sample Diluent NS (ab193972)	1 x 12ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit

Components	1 x 96 tests
Stop Solution	1 x 12ml
TMB Development Solution	1 x 12ml

Function

Cytokine with 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 IL-27 subunit p28 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 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 replivation.

Tissue specificity

Expressed in monocytes and in placenta.

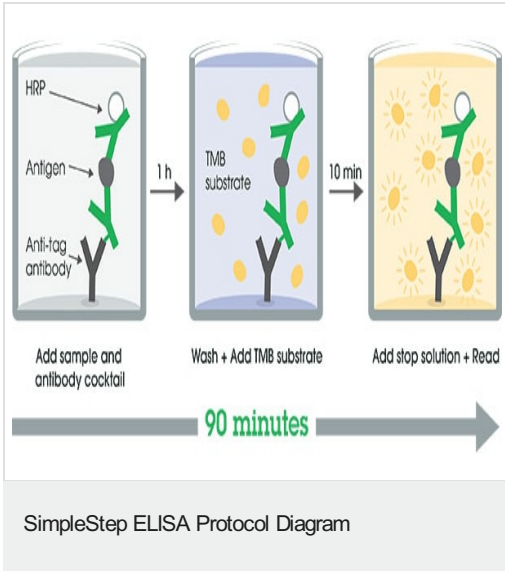**Sequence similarities**

Belongs to the IL-6 superfamily.

**Post-translational modifications**

O-glycosylated.

Cellular localization

Secreted. Does not seem to be secreted without coexpression of EBI3.

Images

SimpleStep ELISA Protocol Diagram

SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.

Example of human IL-27 standard curve in Sample Diluent 50BS.
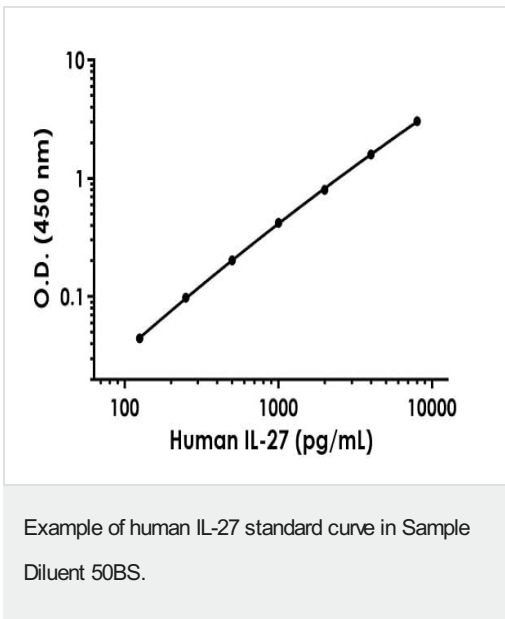
The IL-27 standard curve was prepared as described in Section 10. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.
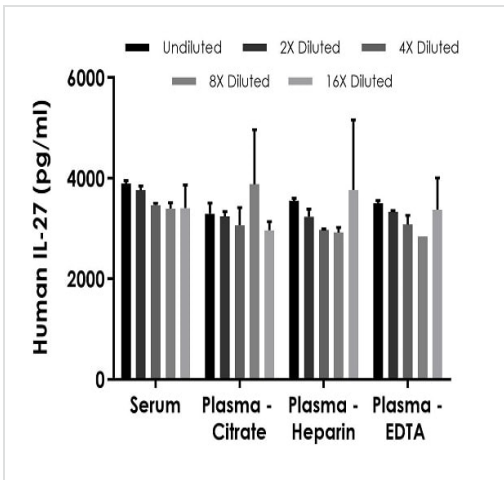
Interpolated concentrations of spiked IL-27 in human serum and plasma samples.

The concentrations of IL-27 were measured in duplicates, interpolated from the IL-27 standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 50%, plasma (citrate) 50%, plasma (heparin) 50% and plasma (EDTA) 50%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2).
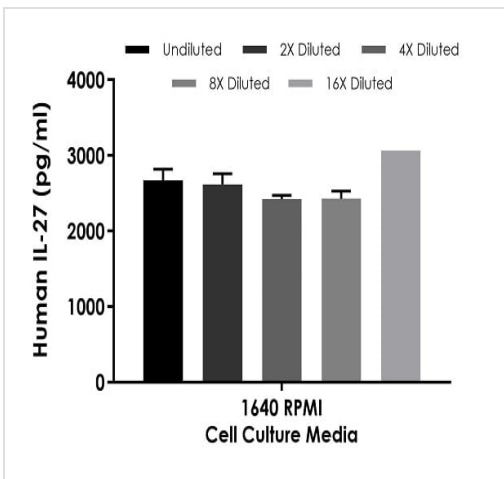
Interpolated concentrations of spiked IL-27 in 1640 RPMI cell culture media samples containing 10% fetal bovine serum.

The concentrations of IL-27 were measured in duplicates, interpolated from the IL-27 standard curves and corrected for sample dilution. Undiluted samples are as follows: 1640 RPMI 50%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2).

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specificity

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compliant
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production

Sandwich ELISA - Human IL-27 ELISA Kit (IL-27
p28) (ab267812)

To learn more about the advantages of recombinant antibodies see
here.

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