

## Anti-Human IL-27 Antibody [PSH03-81] - BSA and Azide free (Capture)

# HA722048



|                            |   |
|----------------------------|---|
| <b>Product Type:</b>       | Recombinant Rabbit monoclonal IgG, primary antibodies |
| <b>Species reactivity:</b> | Human   |
| <b>Applications:</b>       | ELISA(Cap)  |
| <b>Molecular Wt:</b>       | Predicted band size: 27.5 kDa                         |
| <b>Clone number:</b>       | PSH03-81  |

|                               |  |
|-------------------------------|--|
| <b>Description:</b>           | 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 pro-inflammatory 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 pro-inflammatory 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 replication. |
| <b>Immunogen:</b>             | Recombinant protein within Human IL-27 aa 21-229 (Q8NEV9) + Human EB13 aa 29-243 (Q14213).   |
| <b>Positive control:</b>      | Recombinant Human IL-27 protein.   |
| <b>Subcellular location:</b>  | Secreted.  |
| <b>Database links:</b>        | SwissProt: Q8NEV9 Human   Q14213 Human   |
| <b>Recommended Dilutions:</b> |  |
| <b>ELISA(Cap)</b>             | Use at an assay dependent concentration. Can be paired for Sandwich ELISA with Rabbit monoclonal [PSH03-82] to Human IL-27 (Detector) (HA722049). The reference range value is 61.7-5000 pg/ml.  |
| <b>Storage Buffer:</b>        | PBS (pH7.4).   |
| <b>Storage Instruction:</b>   | Store at +4°C after thawing. Aliquot store at -20°C. Avoid repeated freeze / thaw cycles.  |
| <b>Purity:</b>                | Protein A affinity purified.   |

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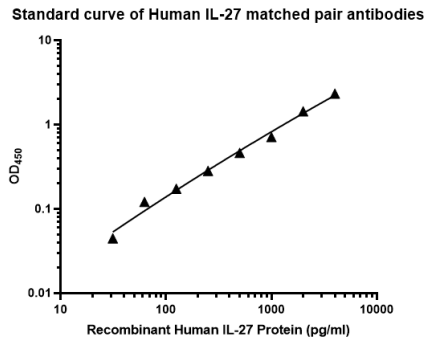
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## Images



**Fig1:** Sandwich ELISA analysis of Human IL-27 matched pair antibodies

Elisa assay was performed by coating wells of a 96-well plate with 100  $\mu$ l per well of capture antibody HA722048 diluted in carbonate/bicarbonate buffer, at a concentration of 2  $\mu$ g/mL overnight at 4°C. Wells of the plate were washed, blocked with 150  $\mu$ l 0.05% tween-20 1% BSA blocking buffer, and incubated with serial diluted Recombinant Human IL-27 protein starting from 5000 pg/ml to 0 pg/ml and detect antibody HA722049-Biotin (0.2  $\mu$ g/ml) for 1 hour at 30°C with shaking. Then the plate was washed and incubated with 100  $\mu$ l per well of SA-HRP for 0.5 hour at 30°C with shaking. Detection was performed using an Ultra TMB Substrate for 10 minutes at room temperature in the dark. The reaction was stopped with sulfuric acid and absorbances were read on a spectrophotometer at 450 nm.

**Note:** All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE".

## Background References

1. Pflanz S., Timans J.C., Cheung J., Rosales R., Kanzler H., Gilbert J., Hibbert L., Churakova T., Travis M., Kastelein R.A. IL-27, a heterodimeric cytokine composed of EBI3 and p28 protein, induces proliferation of naive CD4(+) T cells. *Immunity* 16:779-790 (2002)
2. Feng X.M., Chen X.L., Liu N., Chen Z., Zhou Y.L., Han Z.B., Zhang L., Han Z.C. Interleukin-27 upregulates major histocompatibility complex class II expression in primary human endothelial cells through induction of major histocompatibility complex class II transactivator. *Hum. Immunol.* 68:965-972 (2007)

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