

## Recombinant Human Interleukin-27 (rh IL-27/IL-27p28)

**Synonyms:** IL-27 subunit alpha, IL-30

**Introduction:** Interleukin-27 protein is related to IL-12A & is one of the subunits of a heterodimeric cytokine complex. IL-27 interacts with EBV induced gene 3 also called EBI3, and forms a complex that drives rapid expansion of CD4 (+) T cells. IL-27 complex is synergized with IL-12 in order to trigger the cytokine production of IFN-gamma of CD4 (+) T cells. The biological effect of IL-27 is mediated by class-I cytokine receptor (WSX1/TCRR). The pro-inflammatory activity of IL-27 is mediated through the growing expression of key molecules involved in the MHC class-I & MHC class-II pathways. Both MHC class-I and MHC-class-II expression are increased in endothelial cells after Interleukin-27 stimulation which suggests that it may play an important role in conferring the immune function on vascular endothelium IL-27p28 subunit can be induced by IFN-beta and during LPS-induced maturation of dendritic cells in type-I IFN-dependent manner through IFN regulatory factor-1 activation. Interleukin-27 regulates Interleukin-12 responsiveness of CD4+ T cells through Stat1-dependent and -independent mechanisms. IL-17 & IL-23 play an important IL-17 role in inflammation. Interleukin-27 possesses potent anti-angiogenic activity that plays an important role in its antitumor and antimetastatic activities. EBV induced gene 3 plays a role, independently from IL-27, in regulating anti-viral or anti-tumoral immune responses. Interleukin-27 is a potent inhibitor of HIV-1 replication in macrophages, CD4+ T cells, peripheral blood mononuclear cells. Interleukin-27 triggers STAT activation and gene transcription.

**Description:** IL-27 Human Recombinant produced in HEK cells is a glycosylated non-covalently heterodimer that consists of 2 chains, IL27A (IL27p28) having a Mw of 25kDa and IL27B (EBI3) having a Mw of 30kDa. Each chain migrates separately on SDS-PAGE It is purified by proprietary chromatographic techniques.

**Source:** HEK

**Physical Appearance:** Sterile filtered white lyophilized (freeze-dried) powder.

**Formulation:** Lyophilized from 1 mg/ml in 1xPBS.

**Solubility:** It is recommended to reconstitute the lyophilized IL-27 in sterile PBS containing 0.1% endotoxin-free recombinant HSA.

**Stability:** Lyophilized IL-27 although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution IL27 should be stored at 4°C between 2-7 days and for future use below -18°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

**Purity:** Greater than 90% as observed by SDS-PAGE.

### Amino Acid Sequence:

**IL-27A(215aa):** FPRPPGRPQL SLQELRREFT VSLHLARKLL AEVRGQAHRF AESHLPGVNL YLLPLGEQLP DVSLTFQAWR RLSDPERLCF ISTTLQPFHA LLGGLGTQGR WTNMERMQLW AMRLDLRDLQ RHLRFQVLAA GFNLPEEEEE EEEEEEEERK GLLPGALGSA LQGPAQVSWP QLLSTYRLLH SLELVLSRAV RELLLLSKAG HSWWPLGFPT LSPQP.

**IL-27B (209aa):** RKGPPAALTL PRVQCRASRY PIAVDCSWTL PPAPNSTSPV SFIATYRLGM AARGHSWPCL QQTPTSTSTCT ITDVQLFSMA PYVLNVTAVH PWGSSSSFVP FITEHIKPD PPEGVRLSPL AERQLQVQWE PPGSWPFPEI FSLKYWIRYK RQGAARFHRV GPIEATSFIL RAVRPRARYY VQVAAQDLTD YGELSDWSLP ATATMSLGK.

**Biological Activity:** The specific activity was determined by the dose dependent inhibition of HIV replication in human CD4+ T cells and in human monocyte-derived macrophages and is typically 4-12ng/ml.

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