Sterile

#5725

Mouse $_{His6}$Interleukin-27 (m_{His6}IL-27)

☐ SC 10 µg (With Carrier)

☐ SF 10 µg (Carrier Free)

Multi-milligram quantities available

New 08/11

Cell Signaling TECHNOLOGY®

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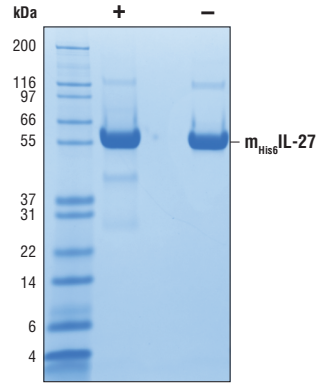
This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Source: Recombinant mouse $_{His6}$IL-27 (m_{His6}IL-27) is a heterodimer that is composed of EBI3 Tyr19-Pro228 (Accession# NP_056581) linked to p28 Phe29-Ser234 (Accession# NP_663611) via the linker GGGSGGGSGGGSGGGS. m_{His6}IL-27 was expressed in human 293 cells at Cell Signaling Technology.

Molecular Characterization: Recombinant N-terminally His6-tagged mIL-27 has a calculated MW of 50,551. DTT-reduced and non-reduced protein migrate as 55 kDa polypeptides. The expected amino terminus of recombinant m_{His6}IL-27 was verified by amino acid sequencing.

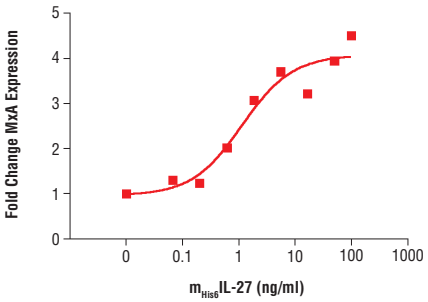
Endotoxin: Less than 0.01 ng endotoxin/1µg m_{His6}IL-27.

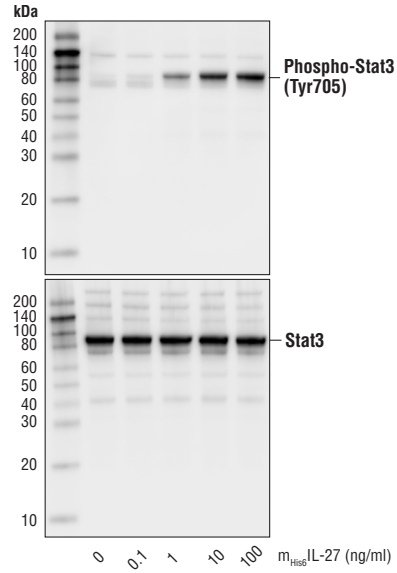
Purity: >97% as determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant m_{His6}IL-27. All lots are greater than 97% pure.



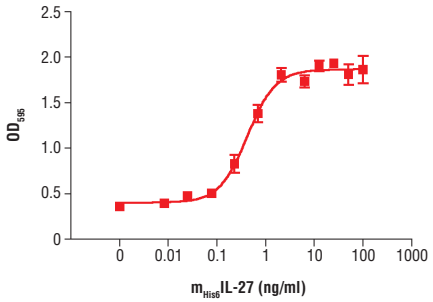
The purity of recombinant m_{His6}IL-27 was determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant m_{His6}IL-27 and staining overnight with Coomassie Blue.

Bioactivity: The bioactivity of m_{His6}IL-27 was determined in a virus protection assay. The ED_{50} of each lot is between 1-6 ng/ml.





Western blot analysis of extracts from Hep G2 cells, untreated or treated with m_{His6}IL-27 for 15 min, using Phospho-Stat3 (Tyr705) (D3A7) XP® Rabbit mAb #9145 (upper) or Stat3 Antibody #9132 (lower).



The bioactivity of recombinant m_{His6}IL-27 was determined in a virus protection assay. Hep G2 cells were pre-treated with increasing concentrations of m_{His6}IL-27 for 24 hr. Cells were then innoculated with encephalomyocarditis virus (EMCV) and incubated for an additional 24 hr. Surviving cells were fixed and stained with crystal violet and the OD_{595} was determined.

◀ *The bioactivity of recombinant m_{His6}IL-27 was determined by induction of MxA mRNA. Hep G2 cells were pre-treated with increasing concentrations of m_{His6}IL-27 for 5 hr. Induction of MxA gene expression was determined by qPCR.*

Formulation: With carrier: Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.2 containing 20 µg BSA per 1 µg m_{His6}IL-27.

Carrier free: Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.2.

Reconstitution:
With carrier: Add sterile PBS, or PBS containing 1% bovine or human serum albumin or 5-10% FBS to a final m_{His6}IL-27 concentration of greater than 50 µg/ml. Solubilize for 30 minutes at room temperature with occasional gentle vortexing.

Carrier free: Add sterile PBS, or PBS containing protein to minimize absorption of m_{His6}IL-27 to surfaces. Solubilize for 30 minutes at room temperature with occasional gentle vortexing. Stock m_{His6}IL-27 should be greater than 50 µg/ml.

Storage: Stable in lyophilized state at 4°C for 1 year after receipt. Sterile stock solutions reconstituted with carrier protein are stable at 4°C for 2 months and at -20°C for 6 months. Avoid repeated freeze-thaw cycles.

Maintain sterility. Storage at -20°C should be in a manual defrost freezer.

Applications: Optimal concentration for the desired application should be determined by the user.

Background: IL-27 is a heterodimer that consists of p28 and EBI3 (1). Antigen presenting cells including monocytes, macrophages, and dendritic cells are the primary sources of IL-27 (1). IL-27 is a pleiotropic cytokine with both pro- and anti-inflammatory activities. IL-27 suppresses TH17 responses and promotes type I regulatory cell differentiation (2-4). In contrast, IL-27 has been shown to play a pro-inflammatory role in a mouse model of T cell-induced colitis (5). IL-27 may also have anti-viral activities (6). IL-27 exerts its effects through a heterodimeric receptor consisting of WSX-1 and gp130 (1,7). IL-27-induced signaling results in Stat1 and Stat3 phosphorylation (1,7).

Background References:

(1) Pflanz, S. et al. (2002) *Immunity* 16, 779-90.

(2) Villarino, A.V. et al. (2010) *J Immunol* 185, 6461-71.

(3) Apetoh, L. et al. (2010) *Nat Immunol* 11, 854-61.

(4) Murugaiyan, G. et al. (2010) *Proc Natl Acad Sci U S A* 107, 11495-500.

(5) Cox, J.H. et al. (2011) *J Exp Med* 208, 115-23.

(6) Bender, H. et al. (2009) *Hepatology* 50, 585-91.

(7) Pflanz, S. et al. (2004) *J Immunol* 172, 2225-31.