Recombinant Mouse IL-27

Catalog Number: 2799-ML/CF

DESCRIPTION

Source Mouse myeloma cell line, NS0-derived

Mouse EBI3 (Tyr19-Pro228) Accession # O35228	GGGSGGGSGGGSGGGS	Mouse p28 (Phe29-Ser234) Accession # Q8K3I6	6-His tag

N-terminus C-terminus

N-terminal Sequence Analysis	Tyr19
Predicted Molecular Mass	48.7 kDa

SPECIFICATIONS

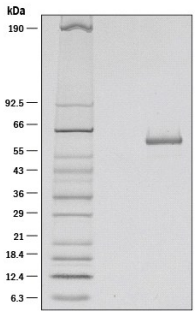
SDS-PAGE	60-65 kDa, reducing conditions
Activity	Measured in an anti-viral assay using HepG2 human hepatocellular carcinoma cells infected with encephalomyocarditis (EMC) virus. Bender H. *et al.* (2009) Hepatology **50**:585. The ED_{50} for this effect is typically 0.6-6 ng/mL.
Endotoxin Level	<1.0 EU per 1 µg of the protein by the LAL method.
Purity	>97%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS and CHAPS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

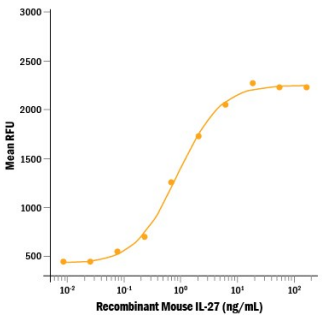
DATA

SDS-PAGE



1 µg/lane of Recombinant Mouse IL-27 was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a single band at 61 kDa.

Bioactivity



Recombinant Mouse IL-27 (Catalog # 2799-ML/CF) demonstrates anti-viral activity in HepG2 human hepatocellular carcinoma cells infected with encephalomyocarditis (EMC) virus. The ED_{50} for this effect is typically 0.6-6 ng/mL.

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BACKGROUND

IL-27 is a heterodimeric group 2 receptor ligand molecule that belongs to the IL-6/IL-12 family of long type I cytokines (1). It is composed of EBI3 (EBV-induced gene 3), a 34 kDa glycoprotein that is related to the p40 subunit of IL-12 and IL-23, and p28, the cloned 28 kDa glycoprotein that is related to the p35 chain of IL-12 (2-4). The mouse EBI3 gene encodes a 228 amino acid (aa) precursor that contains an 18 aa signal peptide and a 210 aa mature protein (5). The mature region contains two potential N-linked glycosylation sites, two fibronectin type III domains, and two pairs of conserved cysteine residues that place the molecule in the type I cytokine receptor family (5). As with p40, (the EBI3 counterpart in IL-12), IL-27 EBI3 is reported to form homodimers (6). Mouse EBI3 is 61% and 66% aa identical to human and bovine EBI3. The mouse p28 gene encodes a 234 aa precursor that contains a 28 aa signal sequence and a 206 aa mature region (7). The mature region is characterized by the presence of one potential N-linked glycosylation site and four α-helices, placing it in the IL-6 family of helical cytokines. Mouse p28 is 74% aa identical to human p28. IL-27 is expressed by monocytes, endothelial cells and dendritic cells (8). IL-27 binds to and signals through a heterodimeric receptor complex composed of WSX-1 (TCCR) and gp130. Evidence suggests IL-27 interacts only with WSX-1 (7, 9, 10). IL-27 has both anti- and proinflammatory properties. As an anti-inflammatory, IL-27 seems to induce a general negative feedback program that limits T and NK-T cell activity (3, 8). At the onset of infection, IL-27 induces an IL-12 receptor on naïve $CD4^+$ T cells, making them susceptible to subsequent IL-12 activity (and possible Th1 development) (6). Notably, IL-12 family cytokines are both induced and inhibited by bacterial products. Microbes promote IL-27 secretion through TLR4, and also block IL-27 production via C5a induction (11).

References:

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