

Recombinant Human IL-1 β Protein

Catalog Number: GMP-TL513

Product Name

Generic Name	Recombinant Human IL-1 β Protein
Synonym	Catabolin, Lymphocyte-activating factor (LAF), Endogenous Pyrogen (EP), Leukocyte Endogenous Mediator (LEM), Mononuclear Cell Factor (MCF), IL1B, IL-1BETA, IL1F2, IL-1 β

Product Information

Construction	A DNA sequence encoding the IL-1 β (GenBank: AAA72849.1) was expressed with a His-tag at the C-terminus.
Expression Host	HEK293 cells
QC Testing Purity	> 90 % as determined by SDS-PAGE
Activity	Determined by the dose-dependent stimulation of the proliferation of D10 cells. The expected ED ₅₀ for this effect is \leq 0.1 ng/ml.
Endotoxin	< 0.1 EU per 1 μ g of the protein by the LAL method.
Molecular Mass	The recombinant human IL-1 β protein consists of 159 amino acids and predicts a molecular mass of 18.2 kD.
Formulation	Lyophilized from sterile PBS, pH 7.4. Normally 6 % mannitol are added as protectants before lyophilization.
Stability & Storage	24 months at 2 $^{\circ}$ C to 8 $^{\circ}$ C in lyophilized state. 6 months at -20 $^{\circ}$ C under sterile conditions after reconstitution. 12 months at -80 $^{\circ}$ C under sterile conditions after reconstitution. Recommend to aliquot the protein into smaller quantities after reconstituting with water for injection, normal saline or PBS, and keep the diluted concentration above 100 μ g/mL. Avoid repeated freeze-thaw cycles.

Background

IL-1 β is a pro-inflammatory cytokine produced in various cells, including monocytes, tissue macrophages, keratinocytes, and other epithelial cells. IL-1 α and IL-1 β bind to the same receptor and have similar biological characteristics. These cytokines have a wide range of activities, including inducing IL-2 release to promote thymocyte proliferation, B cell maturation and proliferation, fibroblast growth factor like activity, and synovial cells releasing prostaglandins and collagenase. However, IL-1 β is a secreted cytokine, while IL-1 α is mainly a cell related cytokine.

References

1. A mesenchymal stem cell line transplantation improves neurological function and angiogenesis in intraventricular amyloid β -infused rats. Haque A, Sheikh A, Mamun AA, Yano S, Hashimoto M, Shido O, Nagai A. *Curr Alzheimer Res.* 2018 Sep 11. doi: 10.2174/1567205015666180911145159.
2. Luteolin protects microglia against rotenone-induced toxicity in a hormetic manner through targeting oxidative stress

response, genes associated with Parkinson's disease and inflammatory pathways. Elmazoglu Z, Yar Saglam AS, Sonmez C, Karasu C. *Drug Chem Toxicol.* 2018 Sep 12:1-8. doi: 10.1080/01480545.2018.1504961.

3. Podocytes contribute, and respond, to the inflammatory environment in lupus nephritis. Wright RD, Beresford MW. *Am J Physiol Renal Physiol.* 2018 Sep 12. doi: 10.1152/ajprenal.00512.2017.