

IL-1 beta Protein, Human (solution)

Cat. No.:	HY-P70586
Synonyms:	Interleukin-1 beta; Catabolin; IL1F2; IL1B.
Species:	Human
Source:	E. coli
Accession:	P01584 (A117-S269)
Gene ID:	3553
Molecular Weight:	Approximately 16.61 kDa

PROPERTIES

AA Sequence	<p>A P V R S L N C T L R D S Q Q K S L V M S G P Y E L K A L H L Q G Q D M E Q Q V</p> <p>V F S M S F V Q G E E S N D K I P V A L G L K E K N L Y L S C V L K D D K P T L</p> <p>Q L E S V D P K N Y P K K K M E K R F V F N K I E I N N K L E F E S A Q F P N W</p> <p>Y I S T S Q A E N M P V F L G G T K G G Q D I T D F T M Q F V S S</p>
Biological Activity	Measured by its ability to induce NF-κB signaling in 293-IL1 Res cells. The ED ₅₀ for this effect is 20-100 pg/mL.
Appearance	Solution.
Formulation	Supplied as a 0.2 μm filtered solution of 20 mM Tris-HCl, 150 mM NaCl, pH 7.5.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconstitution	N/A
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice.

DESCRIPTION

Background	<p>IL-1 beta Protein stands as a potent pro-inflammatory cytokine, recognized for its diverse roles in orchestrating immune responses. Originally identified as a major endogenous pyrogen, IL-1 beta induces a cascade of inflammatory events, including prostaglandin synthesis, neutrophil influx and activation, T-cell and B-cell activation, cytokine production, as well as fibroblast proliferation and collagen production. It plays a pivotal role in immune cell differentiation, promoting Th17 differentiation of T-cells and synergizing with IL-12 to induce IFNγ synthesis from T-helper 1 (Th1) cells. Additionally, IL-1 beta contributes to angiogenesis by inducing VEGF production, working synergistically with TNF and IL-6. Notably, it plays a key role in transducing inflammation downstream of pyroptosis, being specifically released into the extracellular milieu</p>
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through the gasdermin-D (GSDMD) pore. In the context of microbial infection, IL-1 beta acts as a sensor of *S. pyogenes* infection in the skin, undergoing cleavage and activation by the pyogenes SpeB protease, leading to an inflammatory response that curtails bacterial growth during invasive skin infection. However, the cleavage of IL-1 beta by SpeB has a dual role, promoting streptococcal infection of the nasopharynx by disrupting colonization resistance mediated by the microbiota.

Caution: Product has not been fully validated for medical applications. For research use only.

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