

Recombinant Human IL-1 beta Protein

Cat. No. 110102

DESCRIPTION

Expression system	<i>E. coli</i>
Amino acid sequence	Ala117-Ser269, Accession #P01584
Molecular mass	Recombinant Human IL-1 beta Protein, a monomer containing 153 amino acid residues, has a predicted molecular mass of approximately 17.3 kDa.

SPECIFICATIONS

Purity	> 98 % by SDS-PAGE gel and HPLC analyses.
Endotoxin	Less than 0.1 EU/ μ g of rHuIL-1 β as determined by LAL test.
Activity	The ED ₅₀ as determined by a cell proliferation assay using murine D10S cells is less than 1.0 pg/ml, corresponding to a specific activity of $> 1.0 \times 10^9$ U/mg.
Formulation	Lyophilized from a 0.22 μ m filtered solution in PBS. See CoA for details.
Reconstitution	Always centrifuge tubes before opening. Do not mix by vortex or pipetting. Reconstitute in sterile distilled water to a concentration of 0.1-1.0 mg/mL. Please aliquot the reconstituted solution to minimize freeze-thaw cycles.

SHIPPING & STORAGE

Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature listed below.
Storage	Please use a manual defrost freezer and avoid repeated freeze-thaw cycles. ● Lyophilized protein should be stored at $\leq -20^\circ\text{C}$, stable for 12 months after receipt. ● Reconstituted protein solution can be stored at $2-8^\circ\text{C}$ for 1 month. ● Aliquots of reconstituted samples are stable at $\leq -20^\circ\text{C}$ for 3 months.

BACKGROUND

Recombinant human IL-1 β is a human-origin cytokine generated by genetic engineering, commonly expressed in *Escherichia coli*. IL-1 β is a key pro-inflammatory mediator essential for immune activation and inflammatory cascades, mainly secreted by monocytes and macrophages. As a pleiotropic cytokine, it stimulates thymocyte proliferation, promotes B-cell maturation and expansion, and induces prostaglandin and collagenase release. By binding to the IL-1 receptor, IL-1 β activates NF- κ B and MAPK signaling pathways, regulating inflammation, immune homeostasis, as well as cell proliferation and differentiation. Elevated IL-1 β levels are strongly associated with multiple disorders including atherosclerosis, myocardial infarction, rheumatoid arthritis, type 2 diabetes, gout and neurodegenerative diseases. Moreover, it acts as an endogenous pyrogen to induce fever and systemic inflammatory reactions. Widely used as a high-activity research reagent, recombinant human IL-1 β facilitates mechanistic studies of inflammation and autoimmune diseases. It also serves as a standard reference for bioassays and ELISA detection. This product is generally supplied as lyophilized powder for laboratory applications.

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For research, laboratory or further evaluation purposes. NOT for Human Use.

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