

Technical Data Sheet

Recombinant human IL-1 β protein



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Lot Specific Information

Lot Number: Lot Specific*

Total Protein: Lot Specific*

*This information will be noted on the certificate of analysis that ships with this product.

Shelf Life

This product has a guaranteed shelf-life of one year from the date of customer receipt when stored as recommended.

Product Website Link: <https://bioxcell.com/recombinant-human-il-1-beta-protein-rp030>

Product Information

Catalog Number:	RP030
Protein Identity:	Confirmed identity with expected mass, determined by mass spectrometry
Formulation:	Lyophilized, white powder
Endotoxin:	≤ 0.5 EU/mg, LAL assay
Purity:	$\geq 95\%$; SDS-PAGE
Reconstitution:	Resuspend in sterile-filtered water at >50 $\mu\text{g/ml}$. Once reconstituted, store in single-use aliquots to avoid freeze-thaw cycles. Store reconstituted protein at -20 $^{\circ}\text{C}$ to -80 $^{\circ}\text{C}$ for a maximum of 12 months or until the expiry date if sooner.
Sterility:	Sterile
Production:	Microbial. Expressed in <i>E. coli</i>
Molecular Weight:	17.3 kDa (monomer)
Bioactivity Assay:	No significant difference between EC50 of reference and test lots
Mycoplasma:	Negative

Description

Recombinant human IL-1 β protein (interleukin-1 beta) is a 153-amino-acid pro-inflammatory cytokine of the interleukin-1 family and a potent mediator of inflammation and immune responses. Synthesized as an inactive precursor (pro-IL-1 β) that is cleaved by caspase-1 into its active, beta-trefoil-fold form, IL-1 β binds the IL-1 receptor type 1 (IL-1R1) with the accessory protein IL-1RAcP to trigger transcription-factor activation and pro-inflammatory gene expression, with signaling tightly controlled by IL-1 receptor antagonist (IL-1Ra) and soluble receptors. IL-1 β initiates and amplifies the inflammatory cascade, recruiting antigen-presenting cells, macrophages and T lymphocytes, inducing fever and stimulating acute-phase protein production. In cell culture, IL-1 β stimulates immune, epithelial, endothelial and fibroblast cells, polarizes macrophages toward M2 and CD4 $^{+}$ T cells toward Th1/Th17, works with TNF- α to model inflammation, and helps maintain mesenchymal stromal and hematopoietic progenitor cells and guide their differentiation. Because dysregulated IL-1 β drives autoimmune disease, rheumatoid arthritis, type 2 diabetes, inflammatory bowel disease and tumor progression, IL-1 β inhibitors are important therapeutics, making recombinant IL-1 β a key reagent for inflammation and immunology research. This protein is optimized for in vivo and functional applications: low-endotoxin, tag-free, and carrier-free, supporting reproducible performance in demanding preclinical and bioactivity studies. Species reactivity: human. Species similarity: mouse - 78%, rat - 77%, bovine - 67%, porcine - 66%.

Storage

Store at the stock concentration at 4°C . **Do not freeze.**

It is not uncommon for a floccule or precipitate to appear during storage. The floccule is typically buffer salts precipitating out of solution or a small bit of protein aggregation. For information on how to remove floccules or precipitates see our FAQ's at <https://bioxcell.com/faqs>.

Store lyophilized protein between -20 $^{\circ}\text{C}$ and -80 $^{\circ}\text{C}$ until the date of expiry. Avoid freeze-thaw cycles

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Conditions: For research use only. Not for use in diagnostic or therapeutic procedures.

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