

# Cytokines

## Human Recombinant IL-1 beta



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### Interleukin 1 beta

Catalog #	78034.1	10 µg
	78034	100 µg
	78034.2	500 µg
	78034.3	1000 µg

## Product Description

Interleukin 1 beta (IL-1β) is synthesized as an inactive precursor protein or pro-IL-1β. This precursor is cleaved intracellularly by caspase 1 (IL-1β convertase) to form the active form of the protein that is later secreted (Allan et al.). IL-1β binds to IL-1 receptor and activates intracellular signaling via the MAPK or NF-κB pathway. IL-1β is released by monocytes, tissue macrophages, and dendritic cells in response to infection or injury and induces expression of acute-phase proteins. It also promotes the infiltration of inflammatory and immunocompetent cells from the circulation into the extravascular space and affected tissues, by stimulating the expression of adhesion molecules on endothelial cells. IL-1β also affects other immune cells; for example, it co-stimulates T cell functions together with an antigen or mitogen. It also stimulates Th17 differentiation and B cell proliferation in an IL-6-dependent manner.

## Product Information

Alternative Names:	Catabolin, Endogenous pyrogen, EP, Interleukin-1 beta, LAF, LEM, Leukocyte endogenous mediator, Lymphocyte-activating factor, MCF, Mononuclear cell factor
Accession Number:	P01584
Amino Acid Sequence:	MAPVRSLNCT LRDSQQKSLV MSGPYELKAL HLQGQDMEQQ VVFSMSFVQG EESNDKIPVA LGLKEKNLYL SCVLKDDKPT LQLESVDPKN YPKKKMEKRF VFNKIEINNK LEFESAQFPN WYISTSQAEN MPVFLGGTKG QGDITDFTMQ FVSS
Predicted Molecular Mass:	17.5 kDa
Species:	Human
Cross Reactivity:	Mouse, Rat, Monkey
Formulation:	Lyophilized from a sterile-filtered aqueous solution containing sodium phosphate, pH 7.5.
Source:	E. coli

## Specifications

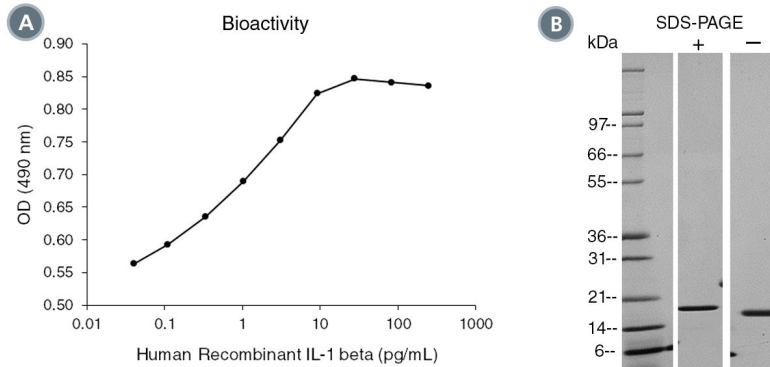
Activity:	The specific activity is $\geq 8.3 \times 10^7$ units/mg ( $EC_{50} \leq 12$ pg/mL) as determined by a cell proliferation assay using D10S cells.
Purity:	$\geq 95\%$
Endotoxin Level:	Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is $\leq 1$ EU/µg protein.

## Preparation and Storage

Storage:	Store at -20°C to -80°C.
Stability:	Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex.

OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at 2 - 8°C for more than 1 month or at -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

## Data



(A) The biological activity of Human Recombinant IL-1 beta was tested by its ability to promote the proliferation of D10S cells. Cell proliferation was measured after 66 hours of culture using a fluorometric assay method. The EC<sub>50</sub> is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC<sub>50</sub> in the above example is 0.7 - 1 pg/mL. (B) 1 µg of Human Recombinant IL-1 beta was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant IL-1 beta has a predicted molecular mass of 17.5 kDa.

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## References

Allan SM et al. (2005) Interleukin-1 and neuronal injury. *Nat Rev Immunol* 5(8): 629–40.

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