

## Cytokines

### Human Recombinant IL-1 beta, ACF

Interleukin 1 beta, animal component-free



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Catalog #	78143	10 µg
	78143.1	100 µg
	78143.2	1000 µg

## Product Description

Interleukin 1 beta (IL-1 $\beta$ ) is synthesized as an inactive precursor protein or pro-IL-1 $\beta$ . This precursor is cleaved intracellularly by Caspase 1 (IL-1 $\beta$  convertase) to form the active form of the protein that is later secreted (Allan et al.). IL-1 $\beta$  binds to IL-1 receptor and activates intracellular signaling via the MAPK or NF- $\kappa$ B pathway. IL-1 $\beta$  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-1 $\beta$  also affects other immune cells; for example, it co-stimulates T cell functions together with antigen or mitogen. It also stimulates Th17 differentiation and B cell proliferation in an IL-6-dependent manner. This product is animal component-free.

## 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 VFNKIEINN K LEFESAQFPN WYISTSQAEN MPVFLGGTKG GQDITDFTMQ 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

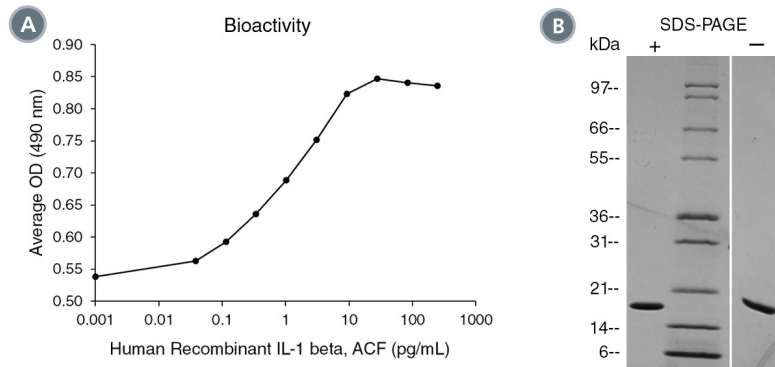
## Specifications

Activity:	The specific activity is $\geq 8.3 \times 10^7$ units/mg ( $EC_{50} \leq 12$ pg/mL) as determined by proliferation of D10S cells.
Purity:	$\geq 95\%$
Endotoxin Level:	Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is $\leq 1$ EU/ $\mu$ g 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. Resuspend the product in sterile water containing 0.1% bovine serum albumin (BSA) to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. Store at 2 - 8°C for up to 1 month or at -20°C to -80°C for up to 3 months. Avoid repeated freeze-thaw cycles. NOTE: If reconstituted product will be used immediately, BSA is not required.

## Data



(A) The biological activity of Human Recombinant IL-1 beta, ACF 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 cytokine at which cell proliferation is at 50% of maximum. The EC<sub>50</sub> in the example above is 0.87 pg/mL.

(B) 1 µg of Human Recombinant IL-1 beta, ACF was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining.

## Related Products

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, please visit our website at [www.stemcell.com/cytokines](http://www.stemcell.com/cytokines) or contact us at [techsupport@stemcell.com](mailto:techsupport@stemcell.com).

## References

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

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