

Cytokines

Mouse Recombinant IL-1 beta



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Interleukin 1 beta

Catalog # 78035.1
78035

10 µg
50 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 antigen or mitogen. It also stimulates Th17 differentiation and B cell proliferation in an IL-6-dependent manner. Mice deficient in IL-1β do not show phenotypical differences from wild-type mice; however, they have a reduced response to inflammation, suggesting that IL-1β plays a key role in inflammatory diseases (Dinarello).

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: P10749

Amino Acid Sequence: MVPIRQLHYR LRDEQQKSLV LSDPYELKAL HLNGQNINQQ VIFSMSFVQG EPSNDKIPVA LGLKGKNLYL SCVMKDGTP T LQLESVDPKQ YPKKKMEKRF VFNKIEVKSK VEFESAEPN WYISTSQAEH KPVFLGNNSG QDIIDFTMES VSS

Predicted Molecular Mass: 17.5 kDa

Species: Mouse

Cross Reactivity: Human, Rat, Monkey

Formulation: Lyophilized after dialysis against phosphate-buffered saline.

Source: E. coli

Specifications

Activity: The specific activity is $\geq 5 \times 10^8$ units/mg ($EC_{50} \leq 2$ 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 ≤ 0.2 EU/µg protein.

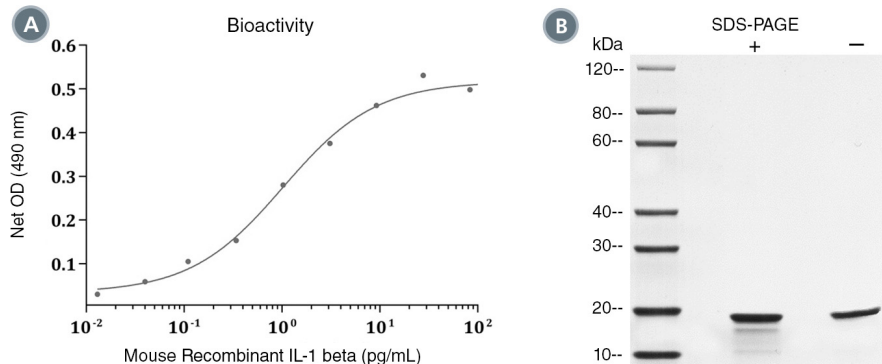
Preparation and Storage

Storage: Store at -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. As a general guide, do not store at 2 - 8°C for more than 2 weeks or at -20°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Mouse Recombinant IL-1 beta was tested by its ability to promote the proliferation of D10S cells. Cell proliferation was measured using a fluorometric assay method. The EC50 is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC50 in the above example is 0.81 pg/mL.

(B) 2 µg of Mouse Recombinant IL-1 beta was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Mouse Recombinant IL-1 beta has a predicted molecular mass of 17.5 kDa.

Related Products

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References

- Allan SM et al. (2005) Interleukin-1 and neuronal injury. *Nat Rev Immunol* 5(8): 629–40.
Dinarello CA. (2009) Immunological and inflammatory functions of the interleukin-1 family. *Annu Rev Immunol* 27: 519–50.

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