

Cytokines

Mouse Recombinant IL-1 alpha



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Interleukin 1 alpha

Catalog #	78129	20 µg
	78129.1	100 µg
	78129.2	1000 µg

Product Description

Interleukin 1 alpha (IL-1 α) is a member of the IL-1 family and a dual-function cytokine. Both the unprocessed precursor and a processed IL-1 α protein signal through IL-1 receptor type 1 (IL-1R1). Various cells, including keratinocytes, thymic epithelium, hepatocytes, endothelial cells, fibroblasts, and the epithelial cells of mucous membranes have high levels of intracellular IL-1 α precursor, which is also expressed on the surface of monocytes and B lymphocytes (Netea et al.). IL-1 α recruits infiltrating cells to a site of injury during necrosis and plays an important role during processes of sterile inflammation (Rider et al.; Cohen et al.). During hypoxia, IL-1 α contributes to angiogenesis (Carmi et al.). IL-1 α is produced by microglia-like cells after ischemic brain injury, which contributes to the inflammation (Luheshi et al.).

Product Information

Alternative Names:	BAF, B-cell-activating factor, Epidermal cell-derived thymocyte-activating factor, ETAF, FAF, Fibroblast-activating factor, IL-1F1, LAF, LEM, Leukocyte endogenous mediator, Lymphocyte-activating factor, MCF, Mononuclear cell factor
Accession Number:	P01582
Amino Acid Sequence:	MSAPYTYQSD LRYKLMKLVLR QKFVMNDSL N QTIYQDV DKH YLSTTWLNDL QQEVKFD MYA YSSGGDDSKY PVT LKISDSQ L FVSAQGEDQ PVLLKELPET PKLITGSETD LIFFWKSINS KNYFTSAAYP ELFIATKEQS RVHLARG LPS MTDFQIS
Predicted Molecular Mass:	18.1 kDa
Species:	Mouse
Cross Reactivity:	Not determined
Formulation:	Lyophilized from a sterile-filtered aqueous solution containing sodium phosphate, pH 7.5
Source:	E. coli

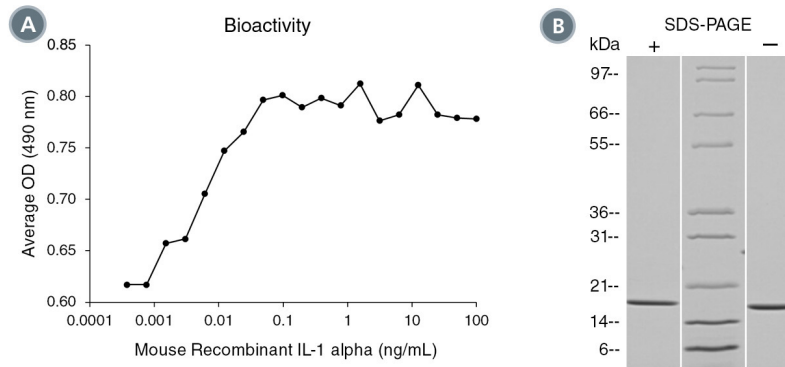
Specifications

Activity:	The specific activity is $\geq 1.0 \times 10^8$ units/mg ($EC_{50} \leq 0.01$ ng/mL) as determined by a cell proliferation assay using D10.G4.1 cells.
Purity:	$\geq 95\%$
Endotoxin Level:	Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is ≤ 1 EU/ μ 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 Mouse Recombinant IL-1 alpha was tested by its ability to promote the proliferation of D10.G4.1 cells. Cell proliferation was measured after 72 hours of culture using a fluorometric assay method. The EC₅₀ is defined as the effective concentration of the cytokine at which cell proliferation is at 50% of maximum. The EC₅₀ in the example above is 0.00581 ng/mL.

(B) 1 µg of Mouse Recombinant IL-1 alpha 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 or contact us at techsupport@stemcell.com.

References

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- Cohen I et al. (2010) Differential release of chromatin-bound IL-1α discriminates between necrotic and apoptotic cell death by the ability to induce sterile inflammation. *Proc Natl Acad Sci U S A* 107(6): 2574–9.
- Luheshi NM et al. (2011) Interleukin-1α expression precedes IL-1β after ischemic brain injury and is localised to areas of focal neuronal loss and penumbral tissues. *J Neuroinflammation* 8(1): 186.
- Netea MG et al. (2015) Inflammasome-independent regulation of IL-1-family cytokines. *Annu Rev Immunol* 33(1): 49–77.
- Rider P et al. (2011) IL-1α and IL-1β recruit different myeloid cells and promote different stages of sterile inflammation. *J Immunol* 187(9): 4835–43.

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