Cytokines

Human Recombinant IL-1 alpha

Interleukin 1 alpha

Catalog #	78115	10 µg
	78115.1	100 µg
	78115.2	500 µg
	78115.3	1000 µg

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Product Description

Interleukin 1 alpha (IL-1α) is a member of the IL-1 family and a dual-function cytokine. Both the unprocessed precursor and a processed IL-1α 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-1α precursor. The precursor is also expressed on the surface of monocytes and B lymphocytes (Netea et al.). IL-1α recruits infiltrating cells to a site of injury during necrosis and plays an important role during processes of sterile inflammation (Cohen et al.; Rider et al.). During hypoxia, IL-1α contributes to angiogenesis (Carmi et al.). Studies in mice show that IL-1α 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:	P01583
Amino Acid Sequence:	SAPFSFLSNV KYNFMRIIKY EFILNDALNQ SIIRANDQYL TAAALHNLDE AVKFDMGAYK SSKDDAKITV ILRISKTQLY VTAQDEDQPV LLKEMPEIPK TITGSETNLL FFWETHGTKN YFTSVAHPNL FIATKQDYWV CLAGGPPSIT DFQILENQA
Predicted Molecular Mass:	18 kDa
Species:	Human
Cross Reactivity:	Not determined
Formulation:	Lyophilized from a sterile-filtered aqueous solution containing sodium phosphate, pH 7.5.
Source:	E. coli

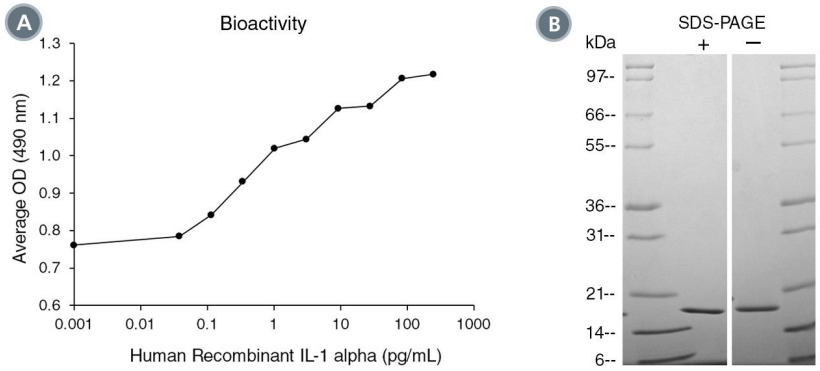
Specifications

Activity:	The specific activity is ≥ 2.0 x 10^7 units/mg (EC50 ≤ 50 pg/mL) as determined by a cell proliferation assay using D10S cells.
Purity:	≥ 95%
Endotoxin Level:	Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 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 alpha was tested by its ability to promote the proliferation of D10S cells. Cell proliferation was measured after 42 hours 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 0.68 pg/mL.
(B) 1 µg of Human Recombinant IL-1 alpha was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant IL-1 alpha has a predicted molecular mass of 18 kDa.

Related Products

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, visit www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

References

Carmi Y et al. (2009) The role of macrophage-derived IL-1 in induction and maintenance of angiogenesis. J Immunol 183(7): 4705–14.
Cohen I et al. (2010) Differential release of chromatin-bound IL-1alpha discriminates between necrotic and apoptotic cell death by the ability to induce sterile inflammation. Proc Natl Acad Sci USA 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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