

Recombinant Mouse IL-1 α (carrier-free)

Catalog# / Size	575008 / 500 μ g 575002 / 10 μ g 575004 / 25 μ g 575006 / 100 μ g
Regulatory Status	RUO
Other Names	RP23-160G19.8, Il-1a
Description	IL-1 was isolated from human blood that had been exposed to a pathogenic bacterium. IL-1 is a pyrogen, and it is an activating factor for lymphocytes. It also damaged joints and influenced liver proteins (3). IL-1 α binds to the cell surface type I and II IL-1 receptors (IL-1RI and IL-1RII). IL-1 and - β and IL-1RA can compete for binding to these receptors. However, only IL-1RI, not IL-1RII, is functional because IL-1RII lacks a cytoplasmic domain and is thus unable to transmit signals to downstream steps (4). During ovarian inflammatory response, proinflammatory cytokine production such as IL-1 is augmented in granulosa cells and can induce local chemokine synthesis, which in turn may affect ovarian function (1). Also, IL-1 is involved in regulating tissue chemokine expression and leukocyte accumulation. The abundant influx of leukocytes into the ovary varies with the stage of the cycle and the leukocytes are thought to have a central role in influencing follicular atresia, ovulation, and luteal function and are potentially involved in ovarian disorders such as premature ovarian failure and polycystic ovary syndrome (1). IL-1a induces CXCL1 RNA and protein in mouse granulosa cells.

Product Details

Source	Mouse IL-1 α , amino acids Ser115-Ser270 (Accession# NM_010554) was expressed in <i>E. coli</i> .
Molecular Mass	The 156 amino acid recombinant protein has a predicted molecular mass of 17,990 Da. The DTT-reduced and the non-reduced protein migrate at approximately 18kDa by SDS-PAGE. The N-terminal amino acid is Serine.
Purity	Purity is >98%, as determined by Coomassie stained SDS-PAGE.
Formulation	0.22 μ m filtered protein solution is in 10mM NaH ₂ PO ₄ , 150mM NaCl, pH 7.2.
Endotoxin Level	Endotoxin level is <0.1 EU/ μ g (<0.01ng/ μ g) protein as determined by the LAL method.
Concentration	10 and 25 μ g sizes are bottled at 200 μ g/mL. 100 μ g size and larger sizes are lot-specific and bottled at the concentration indicated on the vial. To obtain lot-specific concentration, please enter the lot number in our Concentration and Expiration Lookup or Certificate of Analysis online tools.
Storage & Handling	Unopened vial can be stored between 2°C and 8°C for up to 2 weeks, at -20°C for up to six months, or at -70°C or colder until the expiration date. For maximum results, quick spin vial prior to opening. The protein can be aliquoted and stored at -20°C or colder. Stock solutions can also be prepared at 50 - 100 μ g/mL in appropriate sterile buffer, carrier protein such as 0.2 - 1% BSA or HSA can be added when preparing the stock solution. Aliquots can be stored between 2°C and 8°C for up to one week and stored at -20°C or colder for up to 3 months. Avoid repeated freeze/thaw cycles.
Activity	ED50 =1- 5 pg/ml, corresponding to a specific activity of 1- 0.2 x 10 ⁹ units/mg, as determined by the dose dependent stimulation of D10S cells proliferation
Application	Bioassay
Recommended Usage	Use when high specific biological activity is required.
Application Notes	This IL-1 α protein is biologically active, and can be used for in vitro assays.

BioLegend carrier-free recombinant proteins provided in liquid format are shipped on blue-ice. Our comparison testing data indicates that when handled and stored as recommended, the liquid format has equal or better stability and shelf-life compared to commercially available lyophilized proteins after reconstitution. Our liquid proteins are verified in-house to maintain activity after shipping on blue ice and are backed by our [100% satisfaction guarantee](#). If you have any concerns, contact us at tech@biolegend.com.

Application References 1. Lee PY, *et al.* 2011. *J. Immunol.* 186:1747. [PubMed](#)

(PubMed link indicates BioLegend citation)

Product Citations
1. Orzalli MH, *et al.* 2018. *Mol Cell.* 71:825. [PubMed](#)
2. Liberti DC, *et al.* 2021. *Cell Rep.* 35:109092. [PubMed](#)

Antigen Details

Structure	Cytokine
Distribution	IL-1 α is produced by monocytes, macrophages, keratinocytes, stimulated B lymphocytes, fibroblasts, endothelial cells, and epithelial cells. In addition, IL-1 α is localized in various ovarian cell types such as the oocyte, granulosa, and theca cells, and ovarian cancer cells (1).
Function	The cytokine IL-1 α is a key molecule both in the innate and in the adaptive immune response. IL-1 α induces autonomous proliferation in vascular smooth muscle cells, T cell activation during Ag presentation, up-regulation of monocyte/macrophage-mediated tumor cytotoxicity, stimulation of osteoclast formation, and expression of Cxcl1 (kC) chemokine mRNA and protein in mouse granulosa cells (1,2).
Ligand/Receptor	Type I and II IL-1 receptors (IL-1RI and IL-1RII)
Cell Type	Hematopoietic stem and progenitors
Biology Area	Cell Biology, Immunology, Stem Cells
Molecular Family	Cytokines/Chemokines
Antigen References	1. Soo DS and Roby KF, <i>et al.</i> <i>Mol Endocri</i> 20:2999-3013 2006. 2. Yatabe T, <i>et al.</i> <i>Ann Rheum Dis</i> published online 28 Jul 2008. 3. Ledford H <i>et al.</i> <i>Nature</i> 450:29-30 2007. 4. Boraschi B Tagliabue A <i>et al.</i> <i>Vitam Horm</i> 74:229-254 2006.
Gene ID	16175

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