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Product Data Sheet

Recombinant Mouse IL-1α (carrier-free)

Catalog # / Size: 575002 / 10 µg
575004 / 25 µg
575006 / 100 µg
575008 / 500 µg

Source: Mouse IL-1α, amino acids Ser115-Ser270 (Accession# NM_010554) was expressed in *E. coli.*

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.

Endotoxin Level: Endotoxin level is <0.1 EU/µg (<0.01ng/µg) protein as determined by the LAL method.

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

Preparation: 10-100µg sizes are bottled at 200µg/mL. 500µg sizes and larger are bottled at the concentration indicated on the vial.

Formulation: 0.22 µm filtered protein solution is in 10mM NaH_2PO_4, 150mM NaCl, pH 7.2.

Storage: Unopened vial can be stored at 4°C for three months, at -20°C for six months, or at -70°C for one year. For maximum results, quick spin vial prior to opening. Stock solutions should be prepared at no less than 10µg/mL in buffer containing carrier protein such as 1% BSA or HSA or 10% FBS. For long term storage, aliquot into polypropylene vials and store in a manual defrost freezer. **Avoid repeated freeze/thaw cycles.**

Applications:

Applications: Bioassay

Recommended Usage: Use when high specific biological activity is required.

Application Notes: This IL-1α protein is biologically active, and can be used for in vitro assays.

Application References:
1. Lee PY, *et al.* 2011. *J. Immunol.* 186:1747. PubMed

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-1α 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 granulose cells.

Antigen References:
1. Soo DS and Roby KF, *et al. Mol Endocri* 20:2999-3013 2006.
2. Yatabe T, *et al. Ann Rheum Dis* published online 28 Jul 2008.
3. Ledford H *et al, Nature* 450:29-30 2007.
4. Boraschi B Tagliabue A *et al, Vitam Horm* 74:229-254 2006.

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