

## Recombinant Human IL-1 $\alpha$ (carrier-free)

**Catalog # / Size:** 570002 / 10  $\mu$ g  
570004 / 25  $\mu$ g  
570006 / 100  $\mu$ g  
570008 / 500  $\mu$ g

**Source:** Human IL-1 $\alpha$ , amino acids Ser113-Ala271 (Accession# NM\_000575) was expressed in *E. coli*.

**Molecular Mass:** The 159 amino acid recombinant protein has a predicted molecular mass of 18,047 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/ $\mu$ g (<0.01ng/ $\mu$ g) protein as determined by the LAL method.

**Activity:** The ED<sub>50</sub> is 5 - 15 pg/ml, corresponding to a specific activity of 0.6-2.0 x 10<sup>7</sup> units/mg, as determined by the dose dependent stimulation of D10 cells proliferation.

**Preparation:** 10-100 $\mu$ g sizes are bottled at 200 $\mu$ g/ml. 500 $\mu$ g and larger sizes are bottled at the concentration indicated on the vial.

**Formulation:** 0.22  $\mu$ m filtered protein solution is in 10mM NaH<sub>2</sub>PO<sub>4</sub>, 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 10 $\mu$ g/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-1 $\alpha$  protein is biologically active, and can be used for in vitro assays

**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 (2). IL-1 $\alpha$  binds to the cell surface type I and II IL-1 receptors (IL-1RI and IL-1RII). IL-1 and - $\beta$  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 (3). IL-1 $\alpha$  is expressed by cancer cells and promotes angiogenesis and metastasis of pancreatic cancer and human gastric cancer cell lines (4). In addition, IL-1 induced the expression of VEGF in colon cancer (5).

**Antigen References:**

1. Yatabe T, *et al.* Ann Rheum Dis published online 28 Jul 2008.
2. Ledford H *Nature* 450:29-30 2007.
3. Boraschi B Tagliabue A *Vitam Horm* 74:229-254 2006.
4. Shao J and Sheng H J. *Immunol.* 178:4097-4103 2007.
5. Elaraj DM, *et al.* *Clin Cancer Res* 12:1088-1096 2006.



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