

Recombinant Rat Interleukin-1 alpha

Alternate names: IL1 alpha

Catalog No.: PA1064

Quantity: 2 µg

Concentration: 1 mg/ml

Background: Interleukin-1 alpha is a proinflammatory cytokine produced by a wide variety of cell types, including macrophages, osteoblasts, monocytes and hepatocytes. Circulating levels of are normally low and only rise after stimulation by agents such as those produced by inflammation, infection or microbial endotoxins. IL-1 alpha possesses a wide variety of biological activities and exerts its effects by binding to specific cell surface receptors.

Species: Rat

Source: E. coli

Format: **State:** Sterile Filtered White lyophilized (freeze-dried) powder.

Purity: >98% Greater than 98.0% as determined by:

(a) Analysis by RP-HPLC.

(b) Analysis by SDS-PAGE.

Buffer System: The protein was lyophilized from a concentrated sterile solution containing 50mM Tris-HCL, pH=8.

Reconstitution: It is recommended to reconstitute the lyophilized Interleukin 1a in sterile 18MΩ-cm H2O not less than 100µg/ml, which can then be further diluted to other aqueous solutions.

Description: Interleukin-1A Rat Recombinant produced in E.Coli is single, a non-glycosylated, Polypeptide chain containing 155 amino acids. The IL-1A is purified by proprietary chromatographic techniques.

AA Sequence:

The sequence of the first five N-terminal amino acids was determined and was found to be Ala-Pro-His-Ser-Phe.

Biological Activity: The ED50 as determined by the dose-dependant stimulation of murine D10S cells is < 0.005 ng/ml, corresponding to a Specific Activity of 2 x 10⁸ IU/mg.

Molecular weight: 18 kDa 17703 Dalton.

Add. Information: Protein quantitation was carried out by two independent methods:

1. UV spectroscopy at 280 nm using the absorbency value of 0.751 as the extinction coefficient for a 0.1% (1mg/ml) solution. This value is calculated by the PC GENE computer analysis program of protein sequences (IntelliGenetics).
2. Analysis by RP-HPLC, using a standard solution of IL-1 as a Reference Standard.

Storage: Lyophilized Interleukin-1a although stable at room temperature for 3 weeks, should be stored desiccated below -180C. Upon reconstitution IL1A should be stored at 40C between 2-7 days and for future use below -180C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please avoid freeze-thaw cycles.

General Readings:

1. Mehta PA, Eapen M, Klein JP, Gandham S, Elliott J, Zamzow T, et al. Interleukin-1 alpha genotype and outcome of unrelated donor haematopoietic stem cell transplantation for chronic myeloid leukaemia. *Br J Haematol.* 2007 Apr;137(2):152-7. PubMed PMID: 17391495.
2. Interleukin-1 alpha but not interleukin-1 beta gene polymorphism is associated with polycystic ovary syndrome. *J Reprod Immunol* 2007 Apr;73(2):188-93
3. Birol A, Kisa U, Kurtipek GS, Kara F, Kocak M, Erkek E, et al. Increased tumor necrosis factor alpha (TNF-alpha) and interleukin 1 alpha (IL1-alpha) levels in the lesional skin of patients with nonsegmental vitiligo. *Int J Dermatol.* 2006 Aug;45(8):992-3. PubMed PMID: 16911396.

Pictures: Precursor- Protein structure and amino acid sequen

