

Recombinant Human Interleukin-1 alpha

Alternate names: IL1 alpha

Catalog No.: PA1063

Quantity: 2 µg

Concentration: 1 mg/ml

Background: IL-1 alpha is produced by activated macrophages, stimulates thymocyte proliferation by inducing il-2 release, b-cell maturation and proliferation, and fibroblast growth factor activity. IL1A proteins are involved in the inflammatory response, being identified as endogenous pyrogens, and are reported to stimulate the release of prostaglandin and collagenase from synovial cells.

Species: Human

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 20mM Tris-HCL, pH=8, 5mM MgCl₂ and 10% glycerol.

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

Description: Interleukin-1 alpha Human Recombinant produced in E.Coli is single, a non-glycosylated, Polypeptide chain containing 159 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 Ser-Ala-Pro-Phe-Ser.

Biological Activity: The ED₅₀ as determined by the dose-dependant stimulation of murine D10S cells is < 0.001 ng/ml, corresponding to a Specific Activity of 1 x 10⁹ IU/mg.

Molecular weight: 18 kDa 18022 Dalton.

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

1. UV spectroscopy at 280 nm using the absorbency value of 1.13 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 chicken IL-1 as a Reference Standard.

Storage: Lyophilized Interleukin-1 alpha although stable at room temperature for 3 weeks, should be stored desiccated below -18 C. Upon reconstitution IL-1a should be stored at 4 C between 2-7 days and for future use below -18 C. 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

