

Recombinant Human Interleukin-7

Alternate names:	IL7
Catalog No.:	PA1082
Quantity:	2 µg
Concentration:	1 mg/ml
Background:	<p>IL-7 is a cytokine important for B and T cell development. This cytokine and the hepatocyte growth factor (HGF) form a heterodimer that functions as a pre-pro-B cell growth-stimulating factor. This cytokine is found to be a cofactor for V(D)J rearrangement of the T cell receptor beta (TCRB) during early T cell development. This cytokine can be produced locally by intestinal epithelial and epithelial goblet cells, and may serve as a regulatory factor for intestinal mucosal lymphocytes. Knockout studies in mice suggested that this cytokine plays an essential role in lymphoid cell survival.</p>
Species:	Human
Source:	E. coli
Format:	<p>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: Lyophilized from a concentrated solution in water containing no additives. Reconstitution: It is recommended to reconstitute the lyophilized Interleukin -7 in sterile 18MΩ-cm H2O not less than 100µg/ml, which can then be further diluted to other aqueous solutions.</p>
Description:	<p>Interleukin-7 Human Recombinant produced in E.Coli is a single, non-glycosylated polypeptide chain containing 153 amino acids. The IL-7 is purified by proprietary chromatographic techniques.</p> <p>AA Sequence: The sequence of the first five N-terminal amino acids was determined and was found to be Met-Asp-Cys-Asp-Ile.</p> <p>Biological Activity: The ED50 as determined by the dose-dependant stimulation of murine IXN/2B cells is less than 0.5ng/ml, corresponding to a Specific Activity of 2,000,000 IU/mg.</p> <p>Molecular weight: 17 kDa 17412 Dalton.</p>
Add. Information:	<p>Protein quantitation was carried out by two independent methods:</p> <ol style="list-style-type: none">1. UV spectroscopy at 280 nm using the absorbency value of 0.418 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-7 as a Reference Standard.

Storage: Lyophilized Interleukin-7 although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution IL7 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. A three-base-deletion polymorphism in the upstream non-coding region of human interleukin 7 (IL-7) gene could enhance levels of IL-7 expression. *Int J Immunogenet* 2007 Apr;34(2):107-13
 2. Effects of human interleukin 7 on HIV-1 replication in monocyte-derived human macrophages. *AIDS* 2006 Apr 4;20(6):937-9
 3. Disulfide bond assignment in human interleukin-7 by matrix-assisted laser desorption/ionization mass spectroscopy and site-directed cysteine to serine mutational analysis. *J Biol Chem* 1997 Dec 26;272(52):32995-3000
 4. Homology modeling study of the human interleukin-7 receptor complex. *Protein Eng* 1996 Dec;9(12):1135-42
 5. Quantitative and cell-cycle differences in progenitor cells mobilized by recombinant human interleukin-7 and recombinant human granulocyte colony-stimulating factor. *Blood* 1996 Dec 1;88(11):4139-48
 6. Prediction of the three-dimensional structure of human interleukin-7 by homology modeling. *Protein Eng* 1996 Jun;9(6):493-8

Pictures: Precursor- Protein structure and amino acid sequen

