Recombinant Human Interleukin-7 (rh IL-7)

**Synonyms:** Lymphopoietin 1 (LP-1), pre-B cell factor.

**Introduction:** 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. IL-7 is found to be a cofactor for V(D)J rearrangement of the T cell receptor beta (TCRB) during early T cell development. IL-7 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 IL-7 plays an essential role in lymphoid cell survival.

**Description:** Recombinant human IL-7 produced in *E.Coli* is a single, non-glycosylated polypeptide chain containing 153 amino acids and having a molecular mass of 17.4 kDa. The rh IL-7 is purified by proprietary chromatographic techniques.

**Source:** *Escherichia Coli*.

**Physical Appearance:** Sterile filtered white lyophilized (freeze-dried) powder.

**Formulation:** Lyophilized from a 0.22 µm filtered solution in 25 mM sodium phosphate, 200 mM NaCl, pH 6.5. The aliquots of 1µg and 2µg contain Trehalose 5% (w/vol) for better recovery.

**Solubility:** It is recommended to reconstitute the lyophilized rh IL-7 in sterile H₂O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

**Stability:** Lyophilized rh IL-7 although stable at room temperature for 3 weeks, should be stored desiccated below -18° C. Upon reconstitution rh IL-7 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 prevent freeze-thaw cycles.

**Purity:** Greater than 95.0% as determined by SDS-PAGE / silver stain.

**Endotoxicity:** The endotoxin level is less than 1 EU/µg determined by LAL method.

**Amino acid sequence:**

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MDCDIEGKDG KQYESVLMVS IDQLLDSMKE IGSNCLNNEF NFFKRHICDA NKEGMFLFRA ARKLRQFLKM NSTGDFDLHL KVSEGTTIL LNCTGQVKGR KPAALGEAQP TKSLEENKSL KEQKKLNDLC FLKRLLQEIK TCWNKILMG TKEH
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**Biological Activity:** The ED₅₀ as determined by the dose-dependant stimulation of murine IXN/2B cells is < 0.5 ng/ml, corresponding to a Specific Activity of 2 x 10⁶ IU/mg.

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