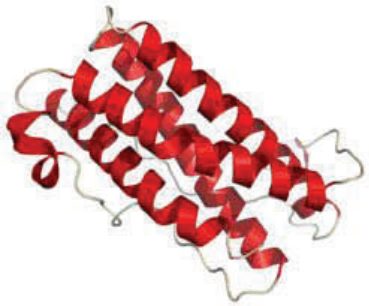
SPECIFICATION SHEET
Rev 082603A

Leukemia Inhibitory Factor

Human, Recombinant (rHuLIF)

Expressed in *E. coli*
Cat. No. CRP0804
Lot. No. (See product label)



PDB rendering based on 1LKI.

PRODUCT INFORMATION

Description: Leukemia Inhibitory Factor (LIF), a 20kDa protein, is a lymphoid factor which promotes long-term maintenance of embryonic stem cells by suppressing spontaneous differentiation. LIF has a number of other activities including cholinergic neuron differentiation, control of stem cell pluripotency, bone and fat metabolism, mitogenesis of certain factor dependent cell lines and promotion of megakaryocyte production in vivo. Human and murine mature LIF exhibit a 78% sequence identity at the amino acid control. Human LIF is equally active on both human and mouse cells. Murine LIF is approximately 1000 fold less active on human cells, than hLIF.

Amino-Acid Sequence: 180 aa(The sequence of the first five N-terminal amino acids was determined and was found to be Ser-Pro-Leu-Pro-Ile.), non-glycosylated

M. W. : 19,717 Da

Recombinant: Expressed in *E. coli*

Purity: >95% as determined by SDS-PAGE, RP-HPLC and FPLC.

Formulation: Lyophilized after extensive dialysis against PBS.

Specific Activity: The ED50 was determined by the M1 cell differentiation assay is < 0.01 ng/ml, corresponding to a specific activity of 1.0 x 10^8 IU/mg.

Endotoxin: Less than 0.1ng/μg (1IEU/μg) of LIF.

Reconstitution: We recommend a quick spin followed by reconstitution in water to a concentration of 0.1-1.0mg/ml. It is recommended that further dilutions be made into buffer or medium to which protein (e.g., 1% BSA) or Tween 20 has been added. This solution can then be stored at 4°C for 1 week or -20°C for future use.

Storage: Lyophilized rHuLIF although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution rHuLIF 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). Aliquot to avoid repeated freeze-thaw cycles.

GENE INFORMATION

Gene Name: LIF
Gene Alias: CDF, D-FACTOR, Emfilermin, HILDA, MLPLI
Gene Type: protein coding
mRNA Refseq: NM_002309.2
Protein Refseq: NP_002300.1
MIM: 159540
GeneID: 3976
Chromosome Location: 22q12.2
Pathway: Cytokine-cytokine receptor interaction, Jak-STAT signaling pathway
Function: cytokine activity, growth factor activity, leukemia inhibitory factor receptor binding, oncostatin-M receptor binding

REFERENCES

1. Borish L and Rocklin R(1992) Physiological studies with human leukocyte inhibitory factor. Immunology Series 57: 373-385

2. Conti P(1990) Leukocyte inhibitory factor activates human neutrophils and macrophages to release leukotriene B4 and thromboxanes. Cytokine 2: 142-148

3.Rocklin RE et al(1981) Partial characterization of a lymphoid cell line (Reh) product with leukocyte inhibitory factor (LIF) activity. Journal of Immunology 127: 534-539

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