

Active Recombinant Rat Leukemia Inhibitory Factor, GST-tagged

Cat. No. Lif-379R Lot. No. (See product label)

SPECIFICATION

Product Overview	Recombinant rat LIF is expressed in E. coli as a fusion protein with GST using the pGEX expression system, cleaved from GST moiety with thrombin and purified by ion-exchange chromatography. Rat LIF (rtLIF) is a 19.9 kDa protein containing 183 amino acid residues that exhibits 91% amino acid sequence identity with murine LIF1.
Species	Rat
Source	E.coli
Description	Leukemia Inhibitory Factor (LIF) 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. Analysis of the secondary structure of rat and murine LIF indicates a difference in the two dimensional structure of both proteins. Studies have shown that rtLIF is more effective in maintaining the undifferentiated phenotype of rat ES cells than similar concentrations of murine LIF.
Purity	Greater than 85% by analytical HPLC and SDS-PAGE.
Format	Liquid in 50mM sodium phosphate / 1mM DTT / 10% glycerol / 250mM NaCl, pH 7.4 and 0.02% Tween 20. No preservatives added.

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Endotoxin Levels	Endotoxin level is less than 0.1 ng per µg of LIF. Tested negative in both aseptic and mycoplasma tests.
Activity	The activity of rat LIF is determined by the ability to induce differentiation of M1 myeloid leukemic cells. The minimum detectable concentration of rat LIF in this assay is 0.5 ng/mL. The specific activity is >1 x 10 ⁸ units/mg, where 50 units is defined as the amount of rat LIF required to induce differentiation in 50% of the M1 colonies in 1 mL agar cultures.
Storage	Rat LIF is shipped on dry ice. Maintain at -20°C until expiration date. Further dilutions should be made into buffer or medium to which protein (e.g., 1% BSA) or Tween 20 has been added and stored at -20°C. Freeze thawing is not recommended.

GENE INFORMATION

Gene Name	Lif leukemia inhibitory factor (cholinergic differentiation factor) [Rattus norvegicus]
Synonyms	Lif; leukemia inhibitory factor (cholinergic differentiation factor); leukemia inhibitory factor; cholinergic neuronal differentiation factor
Gene ID	60584
mRNA Refseq	NM_022196
Protein Refseq	NP_071532
UniProt ID	P17777
Chromosome Location	14q21

Pathway	Cytokine-cytokine receptor interaction; Jak-STAT signaling pathway
Function	cytokine activity; growth factor activity; leukemia inhibitory factor receptor binding

PDB rendering based
on 1LKI.



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