

Recombinant Human LIF Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50621

Size: 10ug, 100ug

Protein Name: Leukemia inhibitory factor (LIF) (Differentiation-stimulating factor) (D factor) (Melanoma-derived LPL inhibitor) (MLPLI) (Emfilermin)

Synonym: LIF, HILDA

UniProt ID: P15018

UniProt Link: www.uniprot.org/uniprotkb/P15018/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 202 AA

Molecular Weight: 22 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MKVLAAGVVPLLLVLHWKHGAGSPLPITPVNATCAIRHPCHNNLMNQIRSQLAQLNGSANALFILYYT
AQGEFPNNDKLCGPNVTDFFPFHANGTEKAKLVELYRIVVYLGTSLGNITRDQKILNPSALSLHSK
LNATADILRGLLSNVLCRLCSKYHVGHVDTYGPDTSGKDVFQKKKLGCQLLGKYKQIIAVLAQAF

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Leukemia inhibitory factor (LIF) (Differentiation-stimulating factor) (D factor) (Melanoma-derived LPL inhibitor) (MLPLI) (Emfilermin) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Functions as a cytokine that binds to the LIF receptor complex (PubMed:11294841, PubMed:14527405, PubMed:36930708). The LIF receptor complex indeed consists of two signaling receptor subunits IL6ST/gp130 and LIFR that transduce the signal into the cell (PubMed:14527405, PubMed:36930708). Functionally, regulates cell self-renewal, differentiation and survival of embryonic stem cells (ESCs) and is crucial for embryonic implantation (By similarity). Mechanistically, ligand binding to LIFR, induces heterodimerization with IL6ST/gp130 activating JAK tyrosine kinases (JAK1 or JAK2 and to a lesser extent TYK2) bound to their intracellular domains (PubMed:11294841). These kinases subsequently phosphorylate IL6ST/gp130 and LIFR (PubMed:11294841). The tyrosine phosphorylated signaling receptors serve in turn as docking sites for recruitment and activation of signal transducers and activators of transcription (STAT3 and to lesser extent STAT1) (PubMed:11294841). In parallel to the activation of the STAT3-pathway, the binding of LIF to the LIF receptor complex leads to the activation of the mitogen-activated protein kinase (MAPK) and the phosphatidylinositol 3-kinase (PI(3)K) pathways (PubMed:11294841). Tyrosine phosphorylation of the p85 subunit of PI(3)K by JAK1 leads to activation of the serine/threonine kinase AKT (protein kinase B) (PubMed:11294841). PI(3)K-dependent signaling is required for efficient self-renewal of murine ES cells, and regulation of ERK activity is functionally important in this response (By similarity). Moreover, induces tyrosine phosphorylation of PTPN11, that associates with IL6ST/gp130-LIFR, which in turn recruits the p85 regulatory subunit of PI(3)K protein kinase, promoting PI3K-AKT activation, and GRB2-RAS-MAPK signaling (PubMed:11294841).

Subcellular Localization: Secreted .

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.