

Recombinant Mouse LIF Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51249

Size: 10ug, 100ug

Protein Name: Leukemia inhibitory factor (LIF) (Differentiation-stimulating factor) (D factor)

Synonym: Lif

UniProt ID: P09056

UniProt Link: www.uniprot.org/uniprotkb/P09056/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 203 AA

Molecular Weight: 22 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MKVLAAGIVPLLLLVLHWKHGAGSPLPITPVNATCAIRHPCHGNLMNQIKNQLAQLNGSANALFISYY
TAQGEPFPNNVEKLCAPNMTDFPSFHGNGTEKTKLVELYRMVAYLSASLTNITRDQKVLNPTAVSLQ
VKLNATIDVMRGLLSNVLCRLCNKYRVGHVDVPPVPDHSDEAFQRKKLGCQLLGTYKQVISVVVQA
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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) 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 (By similarity). The LIF receptor complex indeed consists of two signaling receptor subunits IL6ST/gp130 and LIFR that transduce the signal into the cell (By similarity). Functionally, regulates cell self-renewal, differentiation and survival of embryonic stem cells (ESCs) and is crucial for embryonic implantation (PubMed:1522892, PubMed:16452727, PubMed:26775702, PubMed:3127201, PubMed:3143916). Mechanistically, ligand binding to LIFR, induces heterodimerization with IL6ST/gp130 activating JAK tyrosine kinases (JAK1 or JAK2 and to lesser extent TYK2) bound to their intracellular domains (PubMed:8921810). These kinases subsequently phosphorylate IL6ST/gp130 and LIFR (PubMed:8921810). 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:8921810). 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:15328362, PubMed:9545305). 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:9545305). 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 (PubMed:15328362). 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 (in many systems) GRB2-RAS-MAPK signaling (By similarity).

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.