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Certificate of Analysis (CoA)

Recombinant Human LIF
Animal-Free manufactured

Catalog# AF-300-05
Lot# 1218AFC32
Source: *E.coli*

Expiration Date: December 2027
Manufacturing Site: Westlake Village, CA, USA

Synonyms: Leukemia Inhibitory Factor, Differentiation-stimulating factor, D factor, Melanoma-derived LPL inhibitor (MLPLI), Interleukin 6 family cytokine

Description: LIF is a pleiotrophic factor produced by multiple cell types, including T cells, myelomonocytic lineages, fibroblasts, liver, heart and melanoma. LIF promotes long-term maintenance of embryonic stem cells by suppressing spontaneous differentiation. Other activities include the stimulation of acute phase protein synthesis by hepatocytes, stimulation of differentiation of cholinergic nerves, and suppression of adipogenesis by inhibiting the lipoprotein lipase in adipocytes. While human LIF is active on mouse cells and is widely used in the maintenance of murine ESC to prevent spontaneous differentiation, mouse LIF is not active on human cells due to its inability to bind to the human LIF receptor. Recombinant Human LIF is a 19.7 kDa protein containing 180 amino acid residues, including three disulfide bonds.

Sequence: SPLPITPVNA TCAIRHPCHN NLMNQIRSQL AQLNGSANAL FILYYTAQGE PFPNNLDKLC GPNVTDFPPF HANGTEKAKL VELYRIVVYL GTSLGNITRD QKILNPSALS LHSKLNATAD ILRGLLSNVL CRLCSKYHVG HVDVTYGPDT SGKDVFQKKK LGCQLLGKYK QIIAVLAQAF

Storage & Handling:

Handling: **Centrifuge vial prior to opening. Do not vortex after reconstitution. Avoid repeated freeze-thaw cycles.**

Reconstitution: **Initially reconstitute in water to 0.1-1.0 mg/ml. Store at 2°C to 8°C for up to 1 week or prepare for extended storage.**

Extended Storage: **After initial reconstitution, further dilute in a buffer containing a carrier protein or stabilizer (e.g. 5% Trehalose). Store working aliquots at -20˚C to -80˚C.**

Storage/Stability:

Product Form	Temperature	Storage Time
Lyophilized	-20˚C to -80˚C	December 2027
Lyophilized	4°C	3 months
Lyophilized	Room Temperature	1 month
Reconstituted	2°C to 8°C	1 week
Extended Storage	-20˚C to -80˚C	12 months

Specifications:

Formulation: Sterile filtered through a 0.2-micron filter. Lyophilized with no additives.

Authenticity: Verified by N-terminal and Mass Spectrometry analyses (when applicable).

Purity: ≥ 98% by SDS-PAGE gel and HPLC analyses.

Endotoxin: Endotoxin level is < 0.01 ng/µg of protein (< 0.1 EU/µg).

Protein Content: Verified by UV Spectroscopy and/or SDS-PAGE gel.

Biological Activity: Determined by its ability to stimulate the proliferation of human TF-1 cells. The expected $\mathbf{ED_{50}}$ is ≤ 0.1 ng/ml, corresponding to a specific activity of ≥ 1 x 10^7 units/mg.

Usage: Not for human use.
Country of Origin: USA

Quality Assurance Representative