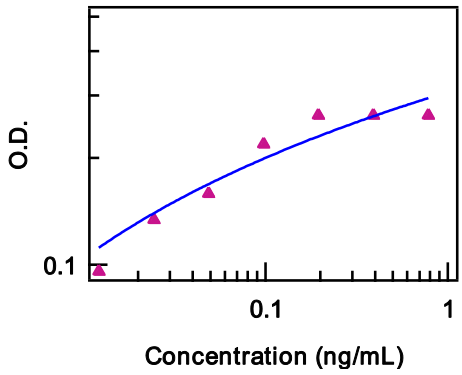
Carrier-Free Recombinant Mouse Leukemia Inhibitory Factor (LIF)

RUO: For Research Use Only



Standard four-parameter fit to induction of mIL-6 in M1 cells by recombinant mouse LIF.

Product Information

Contents: Carrier-Free Recombinant Mouse Leukemia Inhibitory Factor (LIF)

REF **Catalog Number:** 34-8521

Concentration: 0.5 mg/mL

Handling Conditions: For best recovery, always quick-spin vial prior to opening. For dilution of current stock, always include carrier protein (1% BSA or 10% FBS) in the buffered saline diluent.

Source: *E. coli* derived Ser24-Phe203 (accession number NM_008501)

Molecular Mass: 20 kDa

Purity: Greater than 98%, as determined by SDS-PAGE

Endotoxin: Less than 0.01 ng/µg cytokine as determined by the LAL assay

Bioactivity: Recombinant mouse LIF has been tested for induction of mIL-6 in the M1 cell line. The ED_{50} in this assay is 0.75-0.4 ng/ml, which corresponds to a specific activity of 1.3 x 10^6 - 2.5 x 10^6 Units/mg. When used at 10 ng/ml, this recombinant protein has also been found to support mouse embryonic stem cells in an undifferentiated state at same concentration.

Formulation: Sterile liquid, phosphate buffered saline with 0.05% Tween-20, 0.22µm filtered

Temperature Limitation: For greatest stability, keep concentration of primary stock at or above 10 µg/ml. For long term storage, aliquot into polypropylene vials (volumes of 20 µl or greater) and store at or below -80°C. Avoid repeated freeze/thaw cycles.

LOT **Batch Code:** Refer to vial

Use By: Refer to vial

Description

Leukemia inhibitory factor (LIF) is a 20 kDa protein that belongs to the IL-6 receptor family. It binds to a heterodimeric membrane receptor made up of a LIF-specific subunit, gp190 or LIFR, and the subunit gp130, which is shared with the other members of the IL-6 family. LIF expression has been observed in various tissues including

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thymus, lung, and neuronal tissue. LIF can be up-regulated by pro-inflammatory cytokines such as TNFα and IL-17, and elevated levels of LIF have been found in cases of rheumatoid arthritis, neural injury, systemic inflammation, and tuberculosis. LIF displays diverse biological effects, but is best known for its ability to inhibit the differentiation of embryonic stem cells in mice and contribute to stem cell self-renewal.Human and mouse LIF share 79% sequence homology and exhibit cross-species activity. However, LIF inhibition of stem cell differentiation appears to be mouse-specific.

Applications Reported

For research use only, not for diagnostic or therapeutic use. Recombinant mouse LIF is biologically active.

Applications Tested

Recombinant mouse LIF has been tested for induction of mIL-6 in the M1 cell line. The ED_{50} in this assay is 0.75-0.4 ng/ml, which corresponds to a specific activity of 1.3×10^6 - 2.5×10^6 Units/mg.

References

Mullen EM, Gu P, Cooney AJ. Nuclear receptors in regulation of mouse ES pluripotency and differentiation. PPAR Res. 2007;2007:61563

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Gadient RA, Patterson PH. Leukemia inhibitory factor, interleukin 6, and other cytokines using the GP130 transducing receptor: roles in inflammation and injury. Stem Cells. 1999;17(3):127-137