Miltenyi Biotec

Mouse LIF
research grade

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1. Description

Products Mouse LIF, research grade.

Recombinant mouse leukemia inhibitory factor.

Content in µg	Order no.
10	130-095-772
25	130-095-775

Biological activity The ED_{50} is ≤1 ng/mL corresponding to an activity of $\geq 1 \times 10^6$ U/mg.

▲ **Note:** The ED50 is determined by inhibition assay using mouse M1 cells according to Rose and Bruce.[1]

Primary structure Single, non-glycosylated polypeptide chain (180 amino acid residues).

Molecular mass 19.9 kDa.

Source Produced in *E. coli*.

Product format Lyophilized from a filtered (0.2 µm) buffer solution.

Stabilizer Mannitol and trehalose.

Purity >97% as determined by SDS-PAGE analysis.

Endotoxin level Low endotoxin (<0.1 EU/µg cytokine) as determined by Limulus Amebocyte Lysate (LAL) assay.

Storage Lyophilized Mouse LIF, research grade should be stored at –20 °C. The expiration date is indicated on the vial label. Upon reconstitution aliquots should be stored at –20 °C or below. Avoid repeated freeze-thaw cycles.

Reconstitution It is recommended to reconstitute lyophilized Mouse LIF, research grade with deionized sterile-filtered water to a final concentration of 0.1–1.0 mg/mL in a minimal volume of 100 µL. Further dilutions should be prepared with 0.1% bovine serum albumin (BSA) or human serum albumin (HSA) in phosphate-buffered saline.

1.1 Background information

LIF is a pleiotropic cytokine, which is critically involved in embryonic development and blastocyst implantation. LIF belongs to the interleukin 6 family and functions through the gp130 activation of STAT3. In mice LIF is a key factor that prevents embryonic stem cells (ESC) to differentiate. Additionally, LIF affects hematopoiesis, neural development, bone and energy metabolism, and inflammation.

1.2 Applications

Mouse LIF can be used for a variety of applications including:

- Maintenance of self-renewal and pluripotency in conventional mouse ESC cultures.

Optimal concentration for a specific application should be determined by a dose-response experiment.

2. References

1. Rose, T.M. and Bruce, A.G. (1991) Oncostatin M is a member of a cytokine family that includes leukemia-inhibitory factor, granulocyte colony-stimulating factor, and interleukin 6. Proc. Natl. Acad. Sci. U.S.A. 88: 8641–8645.
2. Barral, S. *et al.* (2013) Efficient neuronal *in vitro* and *in vivo* differentiation after immunomagnetic purification of mESC derived neuronal precursors. Stem Cell Res. 10 (2): 133–46.

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