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1. Description

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| Components | Mouse LIF: Purified recombinant mouse leukemia inhibitory factor. |
| Sizes | 10 µg, 25 µg. |
| Biological activity | The ED ₅₀ is ≤1 ng/mL* corresponding to a specific activity of ≥1×10 ⁶ U/mg. |
| Primary structure | Single, non-glycosylated polypeptide chain (180 amino acid residues). |
| Molecular mass | 19.9 kDa. |
| Source | Produced in <i>E. coli</i> . |
| Product format | Lyophilized from a filtered (0.2 µm) buffer solution. |
| Stabilizer | Trehalose and mannitol. |
| 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 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 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. |

* The ED₅₀ is determined by inhibition assay using mouse M1 cells according to Rose and Bruce.¹

1.1 Background information

Leukemia inhibitory factor (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 mouse embryonic stem cells (ESC) to differentiate. Additionally, LIF affects hematopoiesis, neural development, bone and energy metabolism, and inflammation.

1.2 Applications

- Mouse LIF is essential for the 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. Reference

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. USA* 88: 8641–8645.

All protocols and data sheets are available at www.miltenyibiotec.com.

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