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RECOMBINANT HUMAN LEUKEMIA INHIBITORY FACTOR

CATALOG NUMBER: LIF1015-K

LOT NUMBER:

CONCENTRATION: 10 µg/mL

DESCRIPTION: Leukemia Inhibitory Factor (LIF) is a lymphoid factor which promotes long-term maintenance of embryonic stem cells by suppressing spontaneous differentiation. LIF has a number of other activities including cholinergic neuron differentiation, control of stem cell pluripotency, bone and fat metabolism, mitogenesis of certain factor dependent cell lines and promotion of megakaryocyte production *in vivo.* Human LIF is a 19.7 kDa protein containing 181 amino acid residues. The non-glycosylated, *E. coli* expressed, recombinant human LIF is indistinguishable from native LIF in its biological activities *in vitro.* Human and murine mature LIF exhibit a 78% sequence identity at the amino acid control. Human LIF is equally active on both human and mouse cells. Murine LIF is approximately 1000 fold less active on human cells, than hLIF.

SOURCE: hLIF is expressed in E. coli as a fusion protein with GST using the pGEX expression system, cleaved from GST moeity with thrombin and purified by HPLC chromatography.

PURITY: Greater than 95% by analytical HPLC and SDS-PAGE. Endotoxin level is less than 0.1 ng per µg of LIF. Tested negative in both aseptic and microplasmic tests.

ACTIVITY: The activity of human LIF is determined by the ability to induce differentiation of M1 myeloid leukemic cells. The minimum detectable concentration of human LIF in this assay is 0.5 ng/mL. The specific activity is $\geq 1 \times 10^8$ units/mg, where 50 units is defined as the amount of human LIF required to induce differentiation in 50% of the M1 colonies in 1 mL agar cultures.

PRESENTATION: Liquid in PBS, pH 7.4 and 0.02% Tween 20. No preservatives added.

STORAGE/HANDLING: Maintain at 2-8°C until expiration date. Further dilutions should be made into buffer or medium to which protein (e.g., 1% BSA) or Tween 20 has been added.

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RECOMMENDED PROTOCOL

M1 Bioassay

1. The M1 bioassay is performed using *in vitro* semi-solid agar cultures, which contain approximately 100 cells in 1 mL volumes of DME containing 20 % FCS in 0.3% agar.
2. Add 100 μL of sample or hLIF (10^4 units/mL in 5% FCS in isotonic saline) in two-fold serial dilutions in duplicate to 35 mm petri dishes.
3. Add 100 μL of 5% FCS in isotonic saline to two control slides.
4. Incubate at 37°C in fully humidified atmosphere of 10% CO_2 in air for 7 days.
5. Score the number of colonies that show differentiation (note: 50 units is defined as the amount of activity which results in 50% of the colonies being differentiated).

Visit www.esgro-lif.com for additional information

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