

# Recombinant human leukemia inhibitory factor (hLIF). Animal and Endotoxin free

CATALOGUE NUMBER: AMS-155

AVAILABLE SIZES: 10µg, 50µg, 100µg, 1000µg

## DESCRIPTION

Leukemia inhibitory factor (LIF) is a pleiotropic lymphoid factor belonging to the interleukin-6 family of cytokines. It was initially described as a factor inhibiting the proliferation of myeloid leukemia cells and inducing their differentiation into macrophages. Other activities of LIF include inhibition of adipogenesis and roles in cholinergic neuron differentiation, hematopoiesis, inflammation and bone metabolism. LIF inhibits the differentiation of embryonic stem cells, it is therefore important in ES cell culture. Human and mouse LIF share 78% amino acid homology, the human version is equally active on human and mouse cells but murine LIF is not active on human cells.

## SOURCE

Recombinant human LIF is produced in the endosperm tissue of barley grain (*Hordeum vulgare*), that exhibits up to 50 times less protease activity than *E.coli* or mammalian cells. Barley seed is void of any human or animal viral contaminants that could jeopardize your cell culture.

## FORMULATION

Sterile filtered through a 0.2 µm filter. Lyophilized from PBS, pH 7.2

## PURITY

Greater than 98% by SDS-PAGE gel analysis.

## RECONSTITUTION

Note: Always centrifuge the vial before opening. It is recommended to reconstitute the lyophilized protein in sterile water to a concentration of no less than 100 µg/ml. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA).

## STABILITY

The lyophilized protein, though stable at room temperature for few weeks, is best stored at -20°C. Reconstituted protein should be used immediately or stored in working aliquots at -20°C. Avoid repeated freeze-thaw cycles.

## BIOLOGICAL ACTIVITY

Each batch of growth factor is tested for bioactivity and verified to have comparable activity to a commercial source. The bioactivity of human LIF was determined by its ability to induce proliferation of TF-1 cells in a dose dependent manner. The ED50 value for this effect is typically below 0.4 ng/ml corresponding to specific activity of  $>2.5 \times 10^6$  U/mg. Optimal concentration should be determined for specific applications and cell lines.

## ENDOTOXIN LEVEL

Endotoxin level is less than 0.005ng per µg of product (0.05EU/µg) as measured by turbidimetric kinetic assay. Ref. Associates of Cape Cod Industries, Deacon Park, Knowsley, Liverpool, UK

## MAT assay

Purified product carries no pyrogenic or pro-inflammatory contaminants, as assayed with monocyte activation test using Human 10-plex Cytokine Assay measuring IL-6, TNF-alpha and IL-1beta induction. Ref. The Blood Bank, University Hospital of Iceland, Reykjavik, Iceland

## MOLECULAR WEIGHT

Recombinant human LIF contains 180 amino acids and a 16 a.a. histidine-based tag for a total length of 196 a.a. and has a predicted molecular mass of 21.8 kDa including his-tag. As a result of glycosylation, the recombinant protein migrates with an apparent molecular mass of 25-30 kDa in SDS-PAGE.