

# LIF (N-16): sc-48577

## BACKGROUND

Leukemia inhibitory factor, or LIF, is a pleiotropic cytokine that is expressed by a wide variety of cells including activated T lymphocytes, monocytes, mast cells and neuronal cells. Human LIF cDNA encodes a 202 amino acid precursor which is processed to yield a 180 amino acid, biologically active glycoprotein. In addition to its involvement in the stimulation of acute-phase protein during inflammatory processes, LIF has also been implicated in promoting the survival and growth of axons *in vitro*. LIF signals through the LIF receptor, a heterodimer comprised of a LIFR subunit and the gp130 subunit common to the IL-6, IL-11, CNTF and OSM receptors. Janus tyrosine kinases JAK1 and JAK2 are activated in response to LIF stimulation, which in turn phosphorylate Stat1 and Stat3, causing their nuclear translocation and the transcription of Stat-responsive genes. LIF is produced at the maternal-fetal interface and has been shown to play an essential role in implantation in mice. It is produced in high amounts by the human endometrium and the trophoblast itself.

## REFERENCES

- Gough, N.M. 1992. Molecular genetics of leukemia inhibitory factor (LIF) and its receptor. *Growth Factors* 7: 175-179.
- Gillett, N.A., et al. 1993. Leukemia inhibitory factor expression in human carotid plaques: possible mechanism for inhibition of large vessel endothelial regrowth. *Growth Factors* 9: 301-305.
- Giovannini, M., et al. 1993. Tandem linkage of genes coding for leukemia inhibitory factor (LIF) and oncostatin M (OSM) on human chromosome 22. *Cytogenet. Cell Genet.* 64: 240-244.
- Stahl, N., et al. 1994. The tripartite CNTF receptor complex: activation and signaling involves components shared with other cytokines. *J. Neurobiol.* 25: 1454-1466.
- Hirano, T., et al. 1994. Signal transduction through gp130 that is shared among the receptors for the interleukin-6 related cytokine subfamily. *Stem Cells* 12: 262-277.
- Li, M., et al. 1995. Essential function of LIF receptor in motor neurons. *Nature* 378: 724-727.
- Heymann, D., et al. 1995. Modulation of LIF expression in human melanoma cells by oncostatin M. *Immunol. Lett.* 46: 245-251.
- Donato, R., et al. 1995. Role of leukemia inhibitory factor (LIF) in rat peripheral nerve regeneration. *Ann. Acad. Med. Singap.* 24: 94-100.

## CHROMOSOMAL LOCATION

Genetic locus: LIF (human) mapping to 22q12.2; Lif (mouse) mapping to 11 A1.

## SOURCE

LIF (N-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of LIF of human origin.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-48577 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

LIF (N-16) is recommended for detection of LIF of human, rat and, to a lesser extent, mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

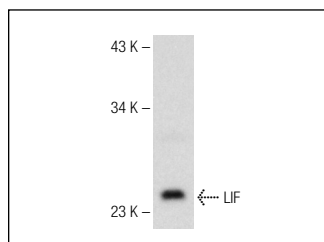
Suitable for use as control antibody for LIF siRNA (h): sc-37222, LIF siRNA (m): sc-37223, LIF siRNA (r): sc-156093, LIF shRNA Plasmid (h): sc-37222-SH, LIF shRNA Plasmid (m): sc-37223-SH, LIF shRNA Plasmid (r): sc-156093-SH, LIF shRNA (h) Lentiviral Particles: sc-37222-V, LIF shRNA (m) Lentiviral Particles: sc-37223-V and LIF shRNA (r) Lentiviral Particles: sc-156093-V.

Molecular Weight of LIF precursor: 22 kDa.

Molecular Weight of mature glycosylated LIF: 40-45 kDa.

Positive Controls: PC-12 cell lysate: sc-2250, Jurkat whole cell lysate: sc-2204 or JAR cell lysate: sc-2276.

## DATA



LIF (N-16): sc-48577. Western blot analysis of LIF expression in PC-12 whole cell lysate.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.