10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

LIF Antibody

Catalog # ASC11302

Product Information

Application	WB, IF, E
Primary Accession	P15018
Other Accession	NP_002300, 4504991
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	22008
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	LIF antibody can be used for detection of LIF by Western blot at 1 - 2 g/mL. Antibody can also be used for immunofluorescence starting at 20 g/mL.

Additional Information

Gene ID	3976
Other Names	Leukemia inhibitory factor, LIF, Differentiation-stimulating factor, D factor, Melanoma-derived LPL inhibitor, MLPLI, Emfilermin, LIF, HILDA
Target/Specificity	LIF; At least two isoforms of LIF are known to exist.
Reconstitution & Storage	LIF antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	LIF Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	LIF (HGNC:6596)
Synonyms	HILDA
Function	Functions as a cytokine that binds to the LIF receptor complex (PubMed:11294841, PubMed:14527405, PubMed:36930708). The LIF receptor complex indeed consists of two signaling receptor subunits IL6ST/gp130 and LIFR that transduce the signal into the cell (PubMed:14527405, PubMed:36930708). Functionally, regulates cell self- renewal, differentiation and survival of embryonic stem cells (ESCs) and is crucial for embryonic implantation (By similarity). Mechanistically, ligand binding to LIFR, induces heterodimerization with IL6ST/gp130 activating JAK tyrosine kinases (JAK1 or

JAK2 and to a lesser extent TYK2) bound to their intracellular domains (PubMed:11294841). These kinases subsequently phosphorylate IL6ST/gp130 and LIFR (PubMed:11294841). The tyrosine phosphorylated signaling receptors serve in turn as docking sites for recruitment and activation of signal transducers and activators of transcription (STAT3 and to lesser extent STAT1) (PubMed:11294841). In parallel to the activation of the STAT3-pathway, the binding of LIF to the LIF receptor complex leads to the activation of the mitogen-activated protein kinase (MAPK) and the phosphatidylinositol 3-kinase (PI(3)K) pathways (PubMed:11294841). Tyrosine phosphorylation of the p85 subunit of PI(3)K by JAK1 leads to activation of the serine/ threonine kinase AKT (protein kinase B) (PubMed:11294841). PI(3)K-dependent signaling is required for efficient self-renewal of murine ES cells, and regulation of ERK activity is functionally important in this response (By similarity). Moreover, induces tyrosine phosphorylation of PTPN11, that associates with IL6ST/gp130-LIFR, which in turn recruits the p85 regulatory subunit of PI(3)K protein kinase, promoting PI3K-AKT activation, and GRB2-RAS-MAPK signaling (PubMed:11294841).

Cellular Location Secreted.

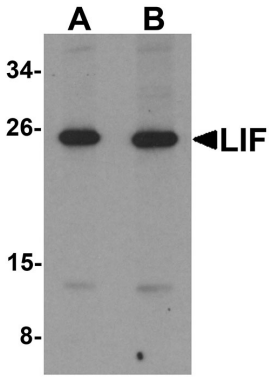
Background

LIF Antibody: LIF is a pleiotropic cytokine with roles in several different systems. It is involved in the induction of hematopoietic differentiation in normal and myeloid leukemia cells, induction of neuronal cell differentiation, regulator of mesenchymal to epithelial conversion during kidney development, and may also have a role in immune tolerance at the maternal-fetal interface. LIF was initially recognized by its ability to induce terminal differentiation of myeloid leukemic cells. It is a member of the IL-6 cytokine superfamily and can be highly glycosylated. LIF signaling is transduced through the LIF-R/gp130 receptor complex, leading to the phosphorylation and activation of the JAK/STAT pathway. Recent evidence shows that LIF inhibits cardiomyogenesis in embryonic stem cells via STAT3 activation.

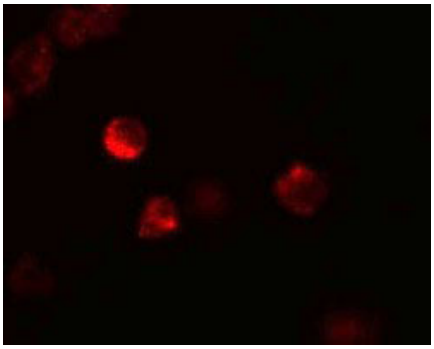
References

Trouillas M, Saucourt C, Guillotin B, et al. The LIF cytokine: towards adulthood. Eur. Cytokine Netw. 2009; 20:51-62.
Hilton DJ, Nicola NA and Metcalf D. Purification of a murine leukemia inhibitory factor from Krebs ascites cells. Anal. Biochem. 1988; 173:359-67.
Schemlzer CH, Burton LE and Tamony CM. Purification and partial characterization of recombinant human differentiation-stimulating factor. Protein Expr. Purif. 1990; 1:54-62

Images



Western blot analysis of LIF in 3T3 cell lysate with LIF antibody at (A) 1 and (B) 2 µg/mL.



Immunofluorescence of LIF in 3T3 cells with LIF antibody at 20 µg/mL.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.