

Lefty (F-11): sc-166708

BACKGROUND

The TGF β superfamily is composed of numerous growth and differentiation factors, including transforming growth factor β (TGF β) 1, 2 and 3; growth/differentiation factor (GDF) 1 through 8; Mullerian inhibiting substance (MIS); bone morphogenic protein (BMP) 2 through 8; glial cell line-derived neurotrophic factor (GDNF); Inhibins (α , β -A, β -B and β -C), Lefty and Nodal. Members of the TGF β superfamily are involved in embryonic development and adult tissue homeostasis. Lefty-A and Lefty-B are homologs of murine Lefty-1 and Lefty-2. Lefty-1 is required for left-right axis determination as a regulator of Lefty-2 and Nodal. It is a secreted protein expressed on the left side of developing embryos. The expression of Lefty-1 is mostly in the prospective floor plate (FPF) although weak expression can be seen in the lateral-plate mesoderm (LPM). It is involved in establishing left-right asymmetry of the organ systems of mammals. Lefty-A plays a role in endometrial bleeding. Mutations in this gene have been associated with left-right axis malformations, particularly in the heart and lungs. Some types of infertility have been associated with dysregulated expression of this gene in the endometrium.

REFERENCES

1. Massague, J., et al. 1987. Multiple type- β transforming growth factors and their receptors. *J. Cell. Physiol. Suppl.* 5: 43-47.
2. Massague, J., et al. 1990. The transforming growth factor- β family. *Annu. Rev. Cell Biol.* 6: 597-641.
3. Meno, C., et al. 1996. Left-right asymmetric expression of the TGF β -family member lefty in mouse embryos. *Nature* 381: 151-155.
4. Kothapalli, R., et al. 1997. Detection of EBAF, a novel human gene of the transforming growth factor β superfamily association of gene expression with endometrial bleeding. *J. Clin. Invest.* 99: 2342-2350.
5. McPherron, A.C., et al. 1997. Regulation of skeletal muscle mass in mice by a new TGF- β superfamily member. *Nature* 387: 83-90.
6. Meno, C., et al. 1998. lefty-1 is required for left-right determination as a regulator of lefty-2 and nodal. *Cell* 94: 287-297.

CHROMOSOMAL LOCATION

Genetic locus: LEFTY2/LEFTY1 (human) mapping to 1q42.12; Lefty1/Lefty2 (mouse) mapping to 1 H4.

SOURCE

Lefty (F-11) is a mouse monoclonal antibody raised against amino acids 77-366 mapping within the mature chain of Lefty of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

Lefty (F-11) is recommended for detection of precursor and mature Lefty-A and Lefty-B of human origin and Lefty-1 and Lefty-2 of mouse and rat origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 Lefty siRNA (h): sc-43894, Lefty shRNA Plasmid (h): sc-43894-SH and Lefty shRNA (h) Lentiviral Particles: sc-43894-V.

Molecular Weight of Lefty precursor: 42 kDa.

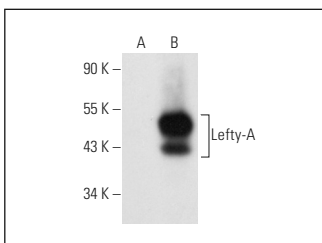
Molecular Weight of mature Lefty: 25-32 kDa.

Positive Controls: rat testis extract: sc-2400, Lefty-A (h): 293T Lysate: sc-115341 or F9 cell lysate: sc-2245.

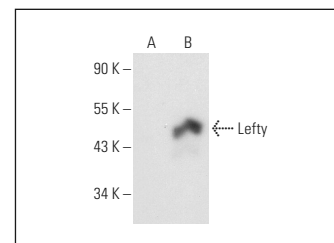
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



Lefty (F-11): sc-166708. Western blot analysis of Lefty-A expression in non-transfected: sc-117752 (A) and human Lefty-A transfected: sc-115341 (B) 293T whole cell lysates.



Lefty (F-11): sc-166708. Western blot analysis of Lefty expression in non-transfected: sc-117752 (A) and human Lefty transfected: sc-114109 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Xia, R.M., et al. 2021. LHPP-mediated histidine dephosphorylation suppresses the self-renewal of mouse embryonic stem cells. *Front. Cell Dev. Biol.* 9: 638815.

RESEARCH USE

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