

# Lefty (H-290): sc-48836

## BACKGROUND

The TGF $\beta$  superfamily is composed of numerous growth and differentiation factors, including transforming growth factor  $\beta$  (TGF $\beta$ ) 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 ( $\alpha$ ,  $\beta$ -A,  $\beta$ -B and  $\beta$ -C), Lefty and Nodal. Members of the TGF $\beta$  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 PFP 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- $\beta$  transforming growth factors and their receptors. *J. Cell Physiol.* 5: 43-47.
2. Massague, J., et al. 1990. The transforming growth factor- $\beta$  family. *Annu. Rev. Cell Biol.* 6: 597-641.
3. Meno, C., et al. 1996. Left-right asymmetric expression of the TGF $\beta$  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  $\beta$  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 $\beta$  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 (human) mapping to 1q42.12; Lefty2 (mouse) mapping to 1 H4.

## SOURCE

Lefty (H-290) is a rabbit polyclonal antibody raised against amino acids 77-366 mapping within the mature chain of Lefty of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

Lefty (H-290) is recommended for detection of precursor and mature Lefty-A and Lefty-B of human origin and Lefty-1 and Lefty-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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).

Molecular Weight of Lefty-A: 42 kDa.

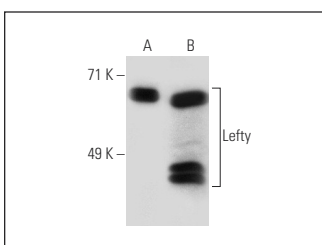
Molecular Weight of Lefty-B: 25-32 kDa.

Positive Controls: Lefty (h): 293T Lysate: sc-114109 or rat testis extract: sc-2400.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>TM</sup> compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker<sup>TM</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz<sup>TM</sup> Mounting Medium: sc-24941.

## DATA



Lefty (H-290): sc-48836. Western blot analysis of Lefty expression in non-transfected: sc-117752 (A) and human Lefty transfected: sc-114109 (B) 293T whole cell lysates.

## 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.