

# Lefty-A (Q-22): sc-133732



The Power to Question

## BACKGROUND

The TGF $\beta$  superfamily is composed of numerous growth and differentiation factors, including transforming growth factor (TGF) 1, 2 and 3; growth/differentiation factor (GDF) 1 through 9; 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 superfamily are involved in embryonic development and adult tissue homeostasis. Lefty-A and Lefty-B are homologues 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

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- Massague, J. 1990. The transforming growth factor- $\beta$  family. *Ann. Rev. Cell Biol.* 6: 597-641.
- Meno, C., Saijoh, Y., Fujii, H., Ikeda, M., Yokoyama, T., Yokoyama, M., Toyoda, Y. and Hamada, H. 1996. Left-right asymmetric expression of the TGF $\beta$ -family member Lefty in mouse embryos. *Nature* 381: 151-155.
- Kothapalli, R., Buyukal, I., Wu, S.Q., Chegini, N. and Tabibzadeh, S. 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
- McPherron, A.C., Lawler, A.M. and Lee, S.J. 1997. Regulation of skeletal muscle mass in mice by a new TGF $\beta$  superfamily member. *Nature* 387: 83-90.
- Meno, C., Shimono, A., Saijoh, Y., Yashiro, K., Mochida, K., Ohishi, S., Noji, S., Kondoh, H. and Hamada, H. 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.

## STORAGE

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

## PROTOCOLS

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

## SOURCE

Lefty-A (Q-22) is an affinity purified rabbit polyclonal antibody raised against synthetic Lefty-A peptide of human origin.

## PRODUCT

Each vial contains 50  $\mu$ g IgG in 500  $\mu$ l PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

## APPLICATIONS

Lefty-A (Q-22) is recommended for detection of Lefty-A of 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Lefty-A siRNA (h): sc-39789, Lefty-A shRNA Plasmid (h): sc-39789-SH and Lefty-A shRNA (h) Lentiviral Particles: sc-39789-V.

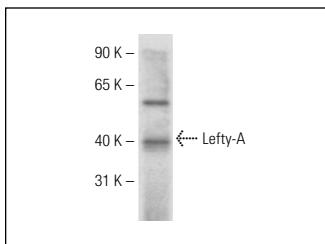
Molecular Weight of Lefty-A: 41 kDa.

Positive Controls: RPMI B226 whole cell lysate.

## 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™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ 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).

## DATA



Lefty-A (Q-22): sc-133732. Western blot analysis of Lefty-A expression in RPMI B226 whole cell lysate.

## RESEARCH USE

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