

# Lefty (M-20): sc-7408

## 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

Lefty (M-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Lefty of mouse origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-7408 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Lefty (M-20) is recommended for detection of Lefty-A and Lefty-B of human origin and precursor and mature Lefty-1 and Lefty-2 of mouse and rat 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).

Lefty (M-20) is also recommended for detection of Lefty-A and Lefty-B in additional species, including canine.

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: 25-32 kDa.

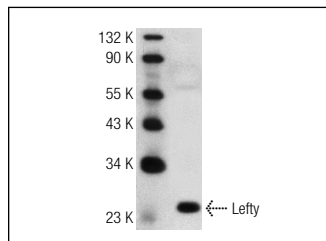
Molecular Weight of Lefty: 42 kDa.

Positive Controls: F9 cell lysate: sc-2245 or rat testis tissue extract: sc-2400.

## STORAGE

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

## DATA



Lefty (M-20): sc-7408. Western blot analysis of Lefty expression in rat testis tissue extract.

## SELECTED PRODUCT CITATIONS

- Tang, M., et al. 2005. Lefty is expressed in mouse endometrium in estrous cycle and peri-implantation period. *Hum. Reprod.* 20: 872-880.
- Tang, M., et al. 2005. *In vivo* gene transfer of Lefty leads to implantation failure in mice. *Hum. Reprod.* 20: 1772-1778.
- Nakaya, K., et al. 2008. Regulatory expression of brachyury and Goosecoid in P19 embryonal carcinoma cells. *J. Cell. Biochem.* 105: 801-813.
- Szumaska, D., et al. 2008. VACTERL/caudal regression/Currarino syndrome-like malformations in mice with mutation in the proprotein convertase Pcsk5. *Genes Dev.* 22: 1465-1477.
- Tang, M., et al. 2010. LEFTY, a member of the transforming growth factor- $\beta$  superfamily, inhibits uterine stromal cell differentiation: a novel autocrine role. *Endocrinology* 151: 1320-1330.
- Argañaraz, M.E., et al. 2012. LEFTY2 expression and localization in rat oviduct during early pregnancy. *Zygote* 20: 53-60.
- Cavallari, C., et al. 2013. Role of Lefty in the anti tumor activity of human adult liver stem cells. *Oncogene* 32: 819-826.

## 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.


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Try **Lefty (D-6): sc-365845** or **Lefty (F-11): sc-166708**, our highly recommended monoclonal alternatives to Lefty (M-20).