

# Lefty (D-6): sc-365845

## 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 endo-metrial 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 (D-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 327-352 at the C-terminus of Lefty of mouse origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Lefty (D-6) is available conjugated to agarose (sc-365845 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365845 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365845 PE), fluorescein (sc-365845 FITC), Alexa Fluor<sup>®</sup> 488 (sc-365845 AF488), Alexa Fluor<sup>®</sup> 546 (sc-365845 AF546), Alexa Fluor<sup>®</sup> 594 (sc-365845 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-365845 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-365845 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-365845 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365845 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor<sup>®</sup> is a trademark of Molecular Probes, Inc., Oregon, USA

## 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) for detailed protocols and support products.

## APPLICATIONS

Lefty (D-6) 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 1:100, 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).

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: 42 kDa.

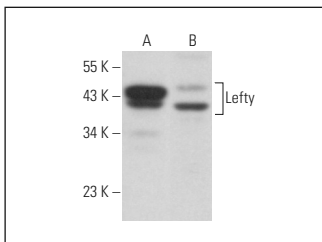
Molecular Weight of Lefty: 25-32 kDa.

Positive Controls: Lefty (h): 293T Lysate: sc-114109, human colon extract: sc-363757 or F9 cell lysate: sc-2245.

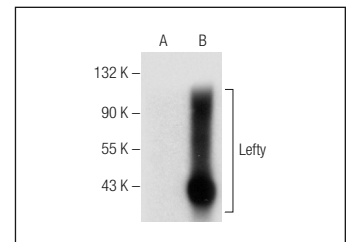
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



Lefty (D-6): sc-365845. Western blot analysis of Lefty expression in F9 whole cell lysate (A) and human colon tissue extract (B).



Lefty (D-6): sc-365845. 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

- Huang, X., et al. 2017. Zfp281 is essential for mouse epiblast maturation through transcriptional and epigenetic control of Nodal signaling. *Elife* 6: e33333.
- Zabala, M., et al. 2020. LEFTY1 is a dual-SMAD inhibitor that promotes mammary progenitor growth and tumorigenesis. *Cell Stem Cell* 27: 284-299.e8.

## RESEARCH USE

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