

# Lefty1 Antibody



**Orders:** 877-616-CELL (2355)  
orders@cellsignal.com

**Support:** 877-678-TECH (8324)

**Web:** info@cellsignal.com  
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H	Transfected Only	40	Rabbit	#O75610	10637

## Product Usage Information

### Application

Western Blotting

### Dilution

1:1000

## Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

## Specificity/Sensitivity

Lefty1 Antibody recognizes transfected levels of total lefty1 protein.

## Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro233 of human lefty1 protein. Antibodies are purified by protein A and peptide affinity chromatography.

## Background

Lefty proteins are members of the TGF- $\beta$  family of cell signaling molecules that are involved in growth and development (1,2). Named for their role in left-right axis determination and their exclusive expression on the left side of the developing mouse embryo, lefty1 and lefty2 contain a cysteine-knot motif that is characteristic of TGF- $\beta$  related proteins, but lack an alpha-helix and a cysteine residue critical for ligand dimerization (3). Early in vertebrate embryogenesis, lefty represses TGF- $\beta$  signaling by inhibiting the phosphorylation of Smad2 following activation of the TGF- $\beta$  receptor (4). Down-regulated very early upon differentiation (5), lefty proteins act as extracellular antagonists of the signaling pathway for Nodal, a TGF- $\beta$  ligand critical for left-right patterning and formation of the mesoderm and endoderm (6). Similar to other members of the TGF- $\beta$  superfamily, lefty proproteins undergo cleavage to release a bioactive protein (7). The biologically active 42 kDa lefty precursor and the 28 kDa polypeptide have been shown to induce MAPK activity (7).

## Background References

1. Kingsley, D.M. (1994) *Genes Dev* 8, 133-46.
2. Heldin, C.H. et al. (1997) *Nature* 390, 465-71.
3. Meno, C. et al. (1997) *Genes Cells* 2, 513-24.
4. Ulloa, L. and Tabibzadeh, S. (2001) *J Biol Chem* 276, 21397-404.
5. Besser, D. (2004) *J Biol Chem* 279, 45076-84.
6. Schier, A.F. (2003) *Annu Rev Cell Dev Biol* 19, 589-621.
7. Ulloa, L. et al. (2001) *J Biol Chem* 276, 21387-96.

## Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

## Western Blot Buffer

**IMPORTANT:** For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

## Applications Key

**W:** Western Blotting

## Cross-Reactivity Key

**H:** Human

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