Mouse Lefty-1 Antibody

Monoclonal Rat IgG_{2A} Clone # 146903

Catalog Number: MAB994

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse Lefty-1 in direct ELISAs and Western blots. In direct ELISAs and Western blots, this antibody shows 10-25% cross-reactivity with recombinant human (rh) Lefty-A and no cross-reactivity with rmArtemin, rhCripto, rdDpp, rhGDNF, rrGDNF, rhLAP, rrMIS, rhNeurturin, rhTGF-α, rhTGF-β1, rhTGF-β1.2, rhTGF-β2, or rhTGF-β3.
Source	Monoclonal Rat IgG_{2A} Clone # 146903
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse Lefty-1 Leu136-Pro368 Accession # Q64280.1
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS.

APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	1 µg/mL	Recombinant Mouse Lefty-1 (Catalog # 994-LF)

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Lefty was first identified in a screen for undifferentiated cell-specific cDNAs from the P19 mouse embryonal carcinoma cells. Its mRNA expression on the left side of the developing embryo earned it the name “lefty”. Two genes exist in mouse (Lefty-1 and Lefty-2) and two in humans (Lefty-A (ebaf) and Lefty-B). By amino acid sequence, mouse Lefty-1 and -2 are more similar to each other (90%) than to either Lefty-A or -B in humans (81-82% identical). Lefty contains the six cysteine residues that are conserved among TGF-β related proteins and that are necessary to form the cysteine-knot structure. However, lefty is distinct from other family members in that it has two RXXR cleavage sites, a longer carboxy terminal sequence, and it lacks the cysteine residue required for intermolecular disulfide linkage. Thus, mature forms of lefty are larger than mature forms of other TGF-β-related proteins. Mouse Lefty-1 is differentially processed depending on the cells in which it is synthesized, and both processing sites can be utilized. Lefty homologues have been identified in other vertebrate organisms including chick, frog, and zebrafish. Although the amino acid sequence identity is not well conserved among vertebrate species, the expression pattern of lefty on the left side is well conserved. Lefty-1 is expressed strongly on the left side of the prospective floor plate and weakly in the left half of the lateral plate mesoderm in E8 mice embryos. In all species examined, lefty proteins function in patterning left-right asymmetry of the developing organ systems such as the heart and lung. Lefty acts as an antagonist to Nodal signaling, potentially by competing for binding to a common receptor.

References:

1. Meno, C. *et al.* (1996) Nature **381**:151.
2. Meno, C. *et al.* (1997) Genes Cells **2**:513.
3. Meno, C. *et al.* (1998) Cell **94**:287.
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5. Schier, A.F. and M.M. Shen (1999) Nature **403**:385.
6. Branford, W.W. *et al.* (2000) Dev. Biol. **223**:291.

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