Human Lefty-A Long and Short Isoforms Antibody

Monoclonal Mouse IgG_{2B} Clone # 182525

Catalog Number: MAB7461

DESCRIPTION

Species Reactivity	Human
Specificity	Detects both long and short forms of recombinant human (rh) Lefty-A in direct ELISAs and Western blots. No cross-reactivity with rhArtemin, recombinant mouse (rm) Artemin, recombinant drosophila DPP, rhGDNF, rhLAP, recombinant rat MIS, rhNeurturin, rhTGF-α, rhTGF-β1, rhTGF-β1.2, or rmLefty-1. The cross-reactivity of this antibody with rhLefty-B (96% amino acid sequence homology) was not determined.
Source	Monoclonal Mouse IgG_{2B} Clone # 182525
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Lefty-A Phe78-Pro366 Accession # O00292.2
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 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 Human Lefty-A (Catalog # 746-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 the name “Lefty”. The human orthologue was initially identified as Ebaf, Endometrial Bleeding-Associated Factor. Two genes exist in mouse (Lefty-1 and Lefty-2) and two in humans (Lefty-A and Lefty-B). By amino acid sequence, human Lefty-A and -B are more similar to each other (96%) than to either Lefty-1 or -2 in the mouse (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. Post-translational cleavage of a propeptide occurs at two different sites resulting in long (aa 78-366) and short (aa 136-366) forms of mature human Lefty-A. 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. Furthermore its function in patterning left-right asymmetry of the developing organ systems such as the heart and lung is consistent in all vertebrate species examined. 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. Kosaki, K. *et al.* (1999) Am. J. Hum. Genet. **64**:712.
3. Schier, A.F. and M.M. Shen, (1999) Nature **403**:385.
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6. Ulloa, L. *et al.* (2001) J. Biol. Chem. **276**:21387.