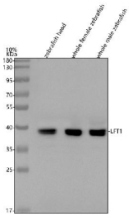
Zebrafish Lft1 Antibody / Lefty | Left-right determination factor (RZ1234)

Catalog No.	Formulation	Size
RZ1234	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Availability	2-3 weeks
Species Reactivity	Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity chromatography
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q9PW55
Applications	Western Blot : 0.5-1ug/ml
Limitations	This Zebrafish Lft1 antibody is available for research use only.



Zebrafish Lft1 Antibody Tissue WB. Western blot analysis of LFT1 protein using Zebrafish LFT1 antibody and 1) zebrafish head, 2) whole female zebrafish and 3) whole male zebrafish tissue lysate. Predicted molecular weight ~41 kDa.

Description

The Zebrafish Lft1 antibody targets Lft1, a secreted TGF-beta family antagonist essential for establishing left-right asymmetry, midline patterning, and early embryonic signaling in Danio rerio. Zebrafish, also known as Danio rerio, express lft1 (Lefty1) in the embryonic midline, where it functions as an inhibitor of Nodal signaling to ensure correct separation of left and right developmental programs. Lft1 is secreted into extracellular spaces and accumulates along the midline, forming a signaling barrier that prevents Nodal ligands from crossing into the right side of the embryo. This spatial control is fundamental for proper heart looping, visceral organ positioning, and left-right morphogenesis.

Lft1 belongs to the Lefty/Left-right determination factor family, a group of secreted proteins within the TGF-beta superfamily that modulate Nodal pathway activity. Lft1 contains a conserved cysteine-knot motif characteristic of TGF-beta ligands but acts as an antagonist rather than an activator. In zebrafish, lft1 expression is highly enriched in the dorsal midline, notochordal plate, and anterior axial mesoderm. A Zebrafish Lft1 antibody is suitable for research applications examining extracellular protein distribution in axial structures, midline signaling boundaries, and developmental pathways regulating left-right pattern formation.

Functionally, Lft1 prevents ectopic Nodal signaling and ensures asymmetric activation of downstream transcription factors such as southpaw, pitx2, and other left-side determinants. By restricting Nodal to the left lateral plate mesoderm, Lft1 allows correct orientation of heart looping, liver placement, gut rotation, and vascular asymmetry. Disruption of lft1 expression leads to randomized organ positioning, abnormal cardiac morphology, and defects in midline integrity. Lft1 also participates in early axial patterning by maintaining the structural and signaling identity of the notochord and surrounding midline tissues.

Structurally, zebrafish Lft1 contains signal peptides for secretion, a pro-domain that undergoes processing, and the mature cysteine-rich domain required for Nodal antagonism. This domain competes with Nodal for receptor binding, thereby blocking signal propagation. Zebrafish lft1 maps to chromosome 23, with enhancer regions responsive to early Nodal, Bmp, and organizer-derived signals. Co-localization studies frequently detect Lft1 in proximity to axial markers such as shh, ntl, or midline extracellular matrix proteins, confirming its role in midline barrier formation and asymmetric signaling control.

A Zebrafish Lft1 antibody is suitable for detecting Lft1 in studies focused on left-right axis establishment, Nodal pathway regulation, midline development, and organ asymmetry in Danio rerio. Because Lft1 defines territories where Nodal must be suppressed, its expression provides essential insight into signaling gradients that control morphogenesis. Researchers use Lft1 expression patterns to analyze defects in heart looping, somite asymmetry, gut rotation, and midline stability, as well as to evaluate genetic or environmental disruptions affecting TGF-beta signaling pathways. These capabilities make the antibody valuable for studies in developmental biology, axis patterning, and vertebrate morphogenesis, and this reagent is supplied for research use by NSJ Bioreagents.

This Zebrafish antibody is part of a broader Zebrafish / Danio rerio antibody panel offered by NSJ Bioreagents.

Application Notes

Optimal dilution of the Zebrafish Lft1 antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Lft1 recombinant protein (amino acids R19-K312) was used as the immunogen for the Zebrafish Lft1 antibody.

Storage

After reconstitution, the Zebrafish Lft1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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