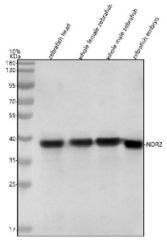
Zebrafish Ndr2 Antibody / Cyclops / Nodal-related 2 precursor (RZ1248)

Catalog No.	Formulation	Size
RZ1248	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	P87358
Applications	Western Blot: 0.5-1ug/ml
Limitations	This Zebrafish Ndr2 antibody is available for research use only.



Zebrafish Ndr2 Antibody Tissue WB. Western blot analysis of Ndr2 protein using Zebrafish Ndr2 antibody and 1) zebrafish head, 2) whole female zebrafish, 3) whole male zebrafish and 4) zebrafish embryo tissue lysate. Predicted molecular weight ~40 kDa.

Description

The Zebrafish Ndr2 antibody targets Ndr2, also known as Cyclops or Nodal-related 2 precursor, a secreted TGF-beta family ligand essential for midline formation, forebrain development, mesendoderm induction, and axial patterning in Danio rerio. Zebrafish, also known as Danio rerio, express ndr2 beginning early in embryogenesis, where it serves as a key organizer-derived morphogen that shapes ventral-dorsal and anterior-posterior patterning. Ndr2 localizes to the extracellular environment following secretion and proteolytic processing, creating signaling gradients that activate Nodal receptors in surrounding cells. Its activity is crucial for specifying midline structures, organizing the developing forebrain, and establishing coordinated germ layer patterning during gastrulation.

Ndr2 belongs to the Nodal-related subfamily of TGF-beta ligands, characterized by a cysteine-knot domain that mediates receptor binding and downstream signaling through Smad2/3 transcription factors. In zebrafish embryos, ndr2 expression arises in the dorsal organizer and adjacent blastoderm margin. Loss of ndr2 results in the classic cyclops phenotype, marked by a failure in ventral forebrain separation, midline defects, and severe axial malformations. A Zebrafish Ndr2 antibody is suitable for research applications examining extracellular localization, organizer signaling domains, and Nodal pathway activity across embryonic tissues undergoing morphogenetic patterning.

Functionally, Ndr2 directs multiple developmental processes. It promotes formation of prechordal plate mesendoderm, a key midline structure required for correct brain and eye separation. Ndr2 also influences convergence and extension movements during gastrulation, helping elongate the embryonic axis and properly position germ layers. Its signaling activates transcriptional regulators such as goosecoid, no tail, sox17, mixer, and eomesodermin, integrating cell fate determination with morphogenetic behavior. Ndr2 works in concert with other Nodal ligands, including Ndr1 and Southpaw, while being modulated by antagonists such as Lefty proteins that restrict signaling to appropriate domains. Because ndr2 loss leads to profound developmental disruptions, Ndr2 is a central model for studying Nodal pathway regulation and early vertebrate morphogenesis.

Structurally, zebrafish Ndr2 is synthesized as a precursor containing a signal peptide, a pro-domain, and a mature C-terminal ligand. After processing by pro-protein convertases, the active ligand is released and binds receptor complexes formed by type I and type II serine-threonine kinase receptors, initiating intracellular Smad signaling cascades. Zebrafish ndr2 maps to chromosome 16, with enhancer elements responsive to organizer-specific transcription factors and maternal determinants. Co-localization and expression studies typically detect Ndr2 in dorsal mesendoderm, prechordal plate tissue, and regions adjacent to the forming midline, often overlapping with key developmental markers such as shh, sox17, and ntl.

A Zebrafish Ndr2 antibody is suitable for detecting Ndr2 in studies focused on Nodal signaling, midline formation, forebrain separation, germ layer patterning, and organizer function in Danio rerio. Because Ndr2 creates essential morphogen gradients that shape early embryonic architecture, its expression provides critical insight into how signaling strength, spatial restriction, and pathway interactions guide vertebrate development. Researchers use Ndr2 to analyze axis patterning defects, evaluate genetic perturbations of the Nodal pathway, and map the molecular basis of midline and forebrain morphogenesis. These applications make the antibody valuable for developmental biology, embryonic signaling research, and vertebrate morphogen gradient analysis, 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 Ndr2 antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Ndr2 recombinant protein (amino acids K23-R370) was used as the immunogen for the Zebrafish Ndr2 antibody.

Storage

After reconstitution, the Zebrafish Ndr2 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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