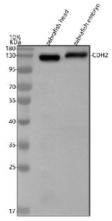
Zebrafish N-cadherin Antibody / Ncad / Cdh2 / Cadherin 2 (RZ1246)

Catalog No.	Formulation	Size
RZ1246	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	Q90275
Applications	Western Blot : 0.5-1ug/ml
Limitations	This Zebrafish N-cadherin antibody is available for research use only.



Zebrafish N-cadherin antibody WB. Western blot analysis of N-cadherin protein using Zebrafish N-cadherin antibody and 1) zebrafish head tissue lysates and 2) zebrafish embryo tissue lysate. Predicted molecular weight ~97 kDa but may be observed at higher molecular weights due to glycosylation.

Description

The Zebrafish N-cadherin antibody targets N-cadherin (also known as Ncad, Cdh2, or Cadherin 2), a classical type I cadherin essential for cell-cell adhesion, tissue morphogenesis, neural development, and structural integrity in Danio rerio. Zebrafish, also known as Danio rerio, express cdh2 early in embryogenesis, beginning during gastrulation where N-cadherin supports adhesion and coordinated cell movements. N-cadherin localizes to the plasma membrane at adherens junctions, linking extracellular homophilic binding domains with intracellular actin cytoskeleton networks through catenin complexes. This adhesion machinery is fundamental for establishing tissue organization, stabilizing intercellular contacts, and guiding morphogenetic events throughout development.

N-cadherin belongs to the cadherin superfamily, which comprises calcium-dependent adhesion proteins that regulate tissue cohesion, signaling, and mechanical interactions. In zebrafish embryos, cdh2 expression is enriched in the neural plate, neural tube, somites, cardiac precursors, and developing sensory structures. A Zebrafish N-cadherin antibody is suitable for research applications examining membrane-associated expression patterns in tissues undergoing cell adhesion-driven morphogenesis, neural formation, and epithelial-to-mesenchymal transitions.

Functionally, N-cadherin mediates strong cell-cell adhesion that is crucial for neural tube closure, brain ventricle shaping, and maintenance of neuroepithelial architecture. It regulates neuronal migration, axon guidance, and synaptic organization by stabilizing contacts between neural cells. In mesoderm-derived tissues, N-cadherin contributes to somite boundary formation, myotome integrity, and heart primordium development. Loss of cdh2 disrupts adhesion, causes neural tube defects, impairs somite patterning, and alters heart morphogenesis. N-cadherin also interfaces with signaling pathways including Wnt, Fgf, and planar cell polarity networks, translating biochemical cues into mechanical coordination during morphogenetic movements.

Structurally, zebrafish N-cadherin contains extracellular cadherin repeats responsible for calcium-dependent adhesion, a transmembrane domain anchoring the protein to the membrane, and a conserved cytoplasmic tail that interacts with beta-catenin, alpha-catenin, and the actin cytoskeleton. These interactions enable N-cadherin to regulate intracellular tension, cell polarity, and mechanical stability. Zebrafish cdh2 maps to chromosome 10, with regulatory elements responsive to early neural patterning and mesodermal signaling. Co-localization studies frequently detect N-cadherin at adherens junctions in neuroepithelial tissues, somite boundaries, cardiogenic zones, and developing sensory organs, where it overlaps with catenins and actin-rich junctional complexes.

A Zebrafish N-cadherin antibody is suitable for detecting N-cadherin in studies focused on cell adhesion, neural development, tissue morphogenesis, epithelial organization, and mechanical coordination in Danio rerio. Its membrane-associated localization allows researchers to map adherens junction distribution, analyze neural tube and somite architecture, evaluate mutants with adhesion or polarity defects, and study mechanisms of coordinated cell movement during gastrulation and organogenesis. N-cadherin is also widely used as a marker for neural progenitors, migratory neurons, and epithelial-to-mesenchymal transitions. These attributes make the antibody a valuable tool for research in developmental cell biology, neurogenesis, tissue mechanics, and vertebrate morphogenesis, and it is supplied for research use by NSJ Bioreagents.

Application Notes

Optimal dilution of the Zebrafish N-cadherin antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish N-cadherin recombinant protein (amino acids M25-R810) was used as the immunogen for the Zebrafish N-cadherin antibody.

Storage

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