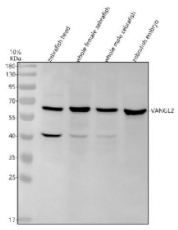
Zebrafish Vangl2 Antibody / Vang-like protein 2 (RZ1196)

Catalog No.	Formulation	Size
RZ1196	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

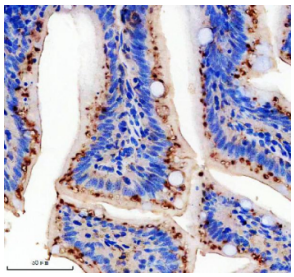
Bulk quote request

Availability	2-3 weeks
Species Reactivity	Zebrafish
Format	Antigen affinity purified
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity chromatography
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q8UVJ6
Applications	Western Blot : 0.5-1ug/ml Immunohistochemistry (FFPE) : 2-5ug/ml
Limitations	This Zebrafish Vangl2 antibody is available for research use only.

IHC staining of FFPE zebrafish skin tissue with Zebrafish Vangl2 antibody, HRP-labeled secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Western blot analysis of Vangl2 protein using Zebrafish Vangl2 antibody and 1) zebrafish head, 2) whole female zebrafish, 3) whole male zebrafish and 4) zebrafish embryo tissue lysate. Predicted molecular weight ~60 kDa.



IHC staining of FFPE zebrafish colon tissue with Zebrafish Vangl2 antibody, HRP-labeled secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.

Description

Zebrafish Vangl2 antibody detects Vangl2, a core component of the planar cell polarity (PCP) pathway that coordinates cell orientation, directional migration, and tissue morphogenesis across vertebrate development. In zebrafish (Danio rerio), Vangl2 is crucial for convergent extension movements, neural tube shaping, inner ear patterning, and organization of epithelial sheets. Known in the literature as Vang-like protein 2, Vangl2 participates in establishing asymmetric cell polarity that guides how cells intercalate, elongate, and align during embryogenesis. Because the PCP pathway is deeply conserved from invertebrates to mammals, Zebrafish Vangl2 antibody reagents support research in developmental signaling, morphogenesis, and structural patterning.

In early zebrafish embryos, vangl2 expression is prominent during gastrulation, where coordinated cell movements narrow and elongate the embryonic axis. Vangl2 interacts with other PCP components including Prickle, Dishevelled, Celsr, and Frizzled family receptors to transmit polarity information across cells and tissues. Disruption of Vangl2 function leads to hallmark PCP phenotypes, including shortened body axes, defective somite boundaries, and abnormal neural tube morphology. Zebrafish proteins such as Vangl2 are frequently referenced in Danio rerio nomenclature, and terms such as Danio Vangl2 or Danio rerio Vangl2 appear interchangeably with zebrafish naming conventions in scientific literature.

Beyond its roles in convergent extension, Vang-like protein 2 contributes to organization of the inner ear, including patterning of mechanosensory hair cells. PCP signaling ensures that hair cells align uniformly to detect directional stimuli, and Vangl2 mutations disrupt this orientation, producing sensory deficits. In the central nervous system, Vangl2 participates in neuronal migration and axon guidance, helping align neuronal circuits during brain development.

Vangl2 is also involved in epithelial remodeling and organ formation. During heart and kidney development, Vangl2 influences cell junction organization and polarized cell behavior, supporting proper tissue curvature and lumen formation. In the pronephros, PCP-dependent tubule elongation relies on Vangl2-mediated coordination of cell rearrangements. Because zebrafish organs form rapidly, they provide a powerful in vivo model for dissecting Vangl2-dependent morphogenetic mechanisms.

At the molecular level, Vangl2 is a membrane-associated protein with four transmembrane domains and cytoplasmic C-terminal motifs that recruit PCP effectors. Its asymmetric localization within epithelial cells is central to establishing planar polarity. Vangl2 interacts with cytoskeletal regulators that shape directional actin dynamics and mediate mechanical force distribution across tissues. Regulation of Vangl2 includes phosphorylation, trafficking to specific membrane domains, and integration with Wnt-PCP signaling inputs.

Vangl2 dysfunction is associated with a range of vertebrate developmental defects, including neural tube closure anomalies and mispatterning of sensory epithelia. Zebrafish models capture these phenotypes with fidelity, enabling researchers to study the interplay between PCP components, cytoskeletal dynamics, and tissue-level organization.

A Zebrafish Vangl2 antibody is suitable for research applications such as western blotting, immunohistochemistry, and assays examining planar cell polarity, convergent extension, epithelial organization, and neural development. This antibody targets Vang-like protein 2 for studies involving vertebrate morphogenesis and PCP signaling. NSJ Bioreagents provides the Zebrafish Vangl2 antibody to support research in developmental biology and tissue architecture.

Application Notes

Optimal dilution of the Zebrafish Vangl2 antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Vangl2 recombinant protein (amino acids M1-D489) was used as the immunogen for the Zebrafish Vangl2 antibody.

Storage

After reconstitution, the Zebrafish Vangl2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.