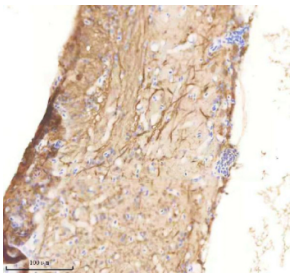
Zebrafish Rab1a Antibody / Rab1aa / Rab1ab (RZ1298)

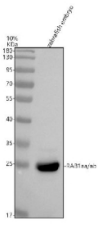
Catalog No.	Formulation	Size
RZ1298	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

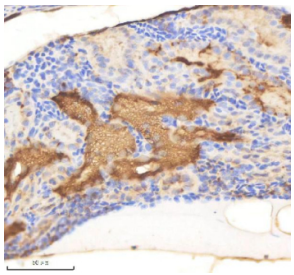
Availability	2-3 weeks
Species Reactivity	Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity chromatography
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	B8JLC8, Q7ZSZ0
Applications	Western Blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml
Limitations	This Zebrafish Rab1a antibody is available for research use only.



Zebrafish Rab1a Antibody Spinal Tissue IHC. Immunohistochemistry staining of zebrafish Rab1aa/ab protein using Zebrafish Rab1a antibody, HRP-labeled secondary and DAB substrate. Rab1a was detected in a paraffin-embedded section of zebrafish spinal tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Rab1a Antibody Embryo Tissue WB. Western blot analysis of Rab1aa/ab protein using Zebrafish Rab1a antibody and zebrafish embryo tissue lysates. Predicted molecular weight ~23 kDa.



Zebrafish Rab1a Antibody Kidney Tissue IHC. Immunohistochemistry staining of zebrafish Rab1aa/ab protein using Zebrafish Rab1a antibody, HRP-labeled secondary and DAB substrate. Rab1a was detected in a paraffin-embedded section of zebrafish kidney tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.

Description

The Zebrafish Rab1a antibody targets Rab1a, including the zebrafish paralogs Rab1aa and Rab1ab, members of the Rab family of small GTPases that regulate ER-to-Golgi transport, early secretory pathway dynamics, and vesicle trafficking essential for proper embryonic development in Danio rerio. Zebrafish, also known as Danio rerio, express rab1aa and rab1ab broadly during early development, with enriched expression in tissues requiring high rates of protein synthesis and secretion, such as the developing brain, somites, notochord, cardiac primordia, and endoderm-derived organs. Rab1a localizes predominantly to the endoplasmic reticulum, ER exit sites, and Golgi membranes, where it governs vesicle budding, cargo selection, and delivery to downstream compartments necessary for morphogenesis and cellular communication.

Rab1a belongs to the Ras superfamily of small GTP-binding proteins and cycles between an active GTP-bound form and an inactive GDP-bound form, enabling it to function as a molecular switch for early secretory pathway regulation. In zebrafish embryos, Rab1a activity supports rapid expansion of secretory capacity during organ specification, neural tube development, cardiac looping, and skeletal muscle formation. A Zebrafish Rab1a antibody is suitable for detecting both Rab1aa and Rab1ab in perinuclear, ER-associated, and Golgi-localized domains, providing a strong marker for vesicle trafficking and early secretory pathway integrity.

Functionally, Rab1a orchestrates critical steps in membrane trafficking, including regulation of COPII vesicle formation at ER exit sites, tethering of transport carriers at the Golgi, and maintenance of Golgi structure. In vertebrate systems, Rab1a influences trafficking of key signaling molecules, adhesion proteins, and extracellular matrix components. In zebrafish, these roles are tightly linked to developmental processes that depend on accurate secretion and membrane transport, such as axis patterning, cardiac morphogenesis, neural differentiation, and endodermal tissue maturation. Disruption of rab1a paralogs can impair protein secretion, alter distribution of cell-surface receptors, and interfere with tissue polarity and organogenesis.

Structurally, zebrafish Rab1aa and Rab1ab contain highly conserved GTP-binding motifs and switch regions required for interaction with effector proteins that coordinate vesicle budding, tethering, and fusion. Prenylation at the C-terminus targets Rab1a to intracellular membranes, while GEFs and GAPs regulate its nucleotide-binding cycle. The zebrafish rab1aa gene maps to chromosome 9 and rab1ab to chromosome 5, each regulated by developmental transcriptional programs that govern membrane trafficking demands and secretory load. Co-localization studies identify Rab1a in ER exit sites, cis-Golgi networks, and dynamic trafficking intermediates, frequently overlapping with markers of COPII components, Golgi tethers, and cytoskeletal remodeling factors.

A Zebrafish Rab1a antibody is suitable for detecting Rab1a in studies focused on membrane trafficking, ER-to-Golgi transport, secretory pathway organization, intracellular signaling distribution, and tissue morphogenesis in Danio rerio. Because secretory pathway dynamics underpin numerous developmental signaling processes, including Wnt, Hedgehog, and Notch ligand trafficking, Rab1a serves as a valuable marker for assessing early secretory function and transport fidelity in zebrafish embryos. This antibody 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 Rab1a antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Rab1a recombinant protein (amino acids R71-T195) was used as the immunogen for the Zebrafish Rab1a antibody.

Storage

After reconstitution, the Zebrafish Rab1a 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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