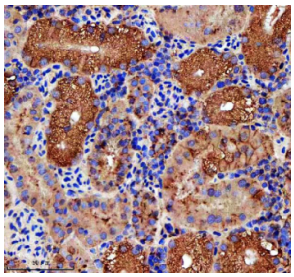
Zebrafish Rab3Gap1 Antibody / Rab3 GTPase-activating protein catalytic subunit (RZ1056)

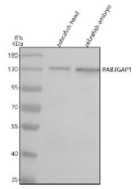
Catalog No.	Formulation	Size
RZ1056	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

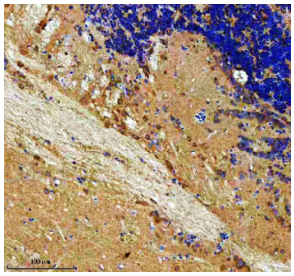
Availability	2-3 weeks
Species Reactivity	Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity chromatography
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q6NUV0
Localization	Cytoplasm
Applications	Western blot: 0.5-1 ug/ml Immunohistochemistry (FFPE): 2-5 ug/ml
Limitations	This Zebrafish Rab3Gap1 antibody is available for research use only.



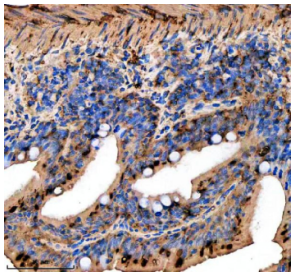
Zebrafish Rab3Gap1 Antibody Kidney IHC. Immunohistochemistry staining of FFPE zebrafish kidney tissue with Zebrafish Rab3Gap1 antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



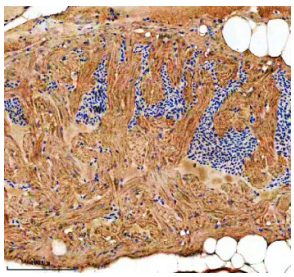
Zebrafish Rab3Gap1 Antibody WB. Western blot analysis of Rab3Gap1 protein using Zebrafish Rab3Gap1 antibody and 1) zebrafish head and 2) zebrafish embryo tissue lysate. Predicted molecular weight ~109 kDa, commonly observed at ~130 kDa.



Zebrafish Rab3Gap1 Antibody Brain IHC. Immunohistochemistry staining of FFPE zebrafish brain tissue with Zebrafish Rab3Gap1 antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



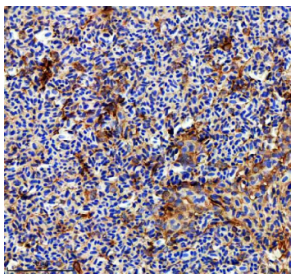
Zebrafish Rab3Gap1 Antibody Colon IHC. Immunohistochemistry staining of FFPE zebrafish colon tissue with Zebrafish Rab3Gap1 antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Rab3Gap1 Antibody Heart IHC. Immunohistochemistry staining of FFPE zebrafish heart tissue with Zebrafish Rab3Gap1 antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Rab3Gap1 Antibody Liver IHC. Immunohistochemistry staining of FFPE zebrafish liver tissue with Zebrafish Rab3Gap1 antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Rab3Gap1 Antibody Spleen IHC. Immunohistochemistry staining of FFPE zebrafish liver tissue with Zebrafish Rab3Gap1 antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.

Description

Zebrafish (Danio rerio) Rab3Gap1 antibody recognizes Rab3 GTPase-activating protein catalytic subunit, encoded by the zebrafish rab3gap1 gene. Rab3Gap1 is the catalytic component of the Rab3GAP complex, which inactivates Rab3 family small GTPases by stimulating GTP hydrolysis. Because Rab3 proteins regulate synaptic vesicle exocytosis, neurotransmitter release, and secretory granule trafficking, Rab3Gap1 plays a critical role in neuronal communication and secretory pathway organization. In Danio rerio, Rab3Gap1 is expressed from early developmental stages and shows enriched localization in the developing brain, retina, spinal cord, neuromuscular system, heart, and endoderm-derived organs such as pancreas. Subcellular localization is primarily cytoplasmic with enrichment at vesicle-rich regions involved in trafficking and regulated secretion.

Rab3 GTPase-activating protein catalytic subunit contributes broadly to vesicle dynamics. By converting active Rab3-GTP to inactive Rab3-GDP, Rab3Gap1 helps coordinate vesicle docking, priming, fusion probability, and vesicle recycling. In zebrafish embryos, these activities shape neurotransmission, hormone release, and organelle maturation. Rab3Gap1 supports synaptic development by regulating vesicle cycle timing, ensuring proper delivery of synaptic components and stabilizing early neural circuitry. Disruption of Rab3Gap1 can cause aberrant synaptic function, impaired neurotransmitter release, or delays in neuronal differentiation.

During neural development, Rab3Gap1 influences axonal growth, neuronal migration, and synaptic assembly. Developing neurons in the brain and spinal cord rely on tightly regulated vesicle trafficking to supply membranes, receptors, and cytoskeletal regulators essential for axon extension and synaptic targeting. Rab3Gap1-mediated control of Rab3 activity ensures that vesicle fusion events occur at appropriate times and locations, supporting neural circuit establishment. In the retina, where photoreceptors and interneurons depend on continuous vesicular turnover, Rab3Gap1 contributes to synaptic ribbon maintenance and visual pathway maturation.

Rab3Gap1 also supports endocrine and secretory functions in organs such as pancreas. Zebrafish pancreatic endocrine cells rely on regulated exocytosis for hormone release, and Rab3Gap1 helps coordinate vesicle maturation and secretion timing. Similar vesicle-dependent processes occur in developing liver and gut epithelium, which require Rab3-mediated trafficking for protein sorting and membrane turnover. Because secretory tissues undergo rapid differentiation during embryogenesis, Rab3Gap1 helps maintain balanced trafficking required for organogenesis.

In muscle and neuromuscular junction development, Rab3Gap1 participates in vesicle transport required for synaptic bouton formation and receptor delivery. Proper Rab3 regulation is essential for establishing functional neuromuscular connectivity, enabling efficient communication between motor neurons and muscle fibers. Cardiac tissue may also rely on Rab3-associated trafficking pathways for vesicle transport and membrane organization during early morphogenesis.

Beyond its developmental functions, Rab3Gap1 has been linked to human disease. Mutations in RAB3GAP1 cause Warburg Micro syndrome, characterized by severe neurodevelopmental defects, highlighting the conserved role of Rab3 regulation in vertebrate brain development. Zebrafish serve as a valuable model for studying Rab3Gap1-related phenotypes due to shared vesicle trafficking mechanisms and rapid embryonic development.

This Zebrafish Rab3Gap1 antibody is suitable for detecting Rab3 GTPase-activating protein catalytic subunit in research focused on vesicle trafficking, neural development, synaptic maturation, endocrine secretion, and organogenesis in zebrafish. NSJ Bioreagents provides this reagent within its zebrafish and vesicle-transport antibody collection.

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

Application Notes

Optimal dilution of the Zebrafish Rab3Gap1 antibody should be determined by the researcher.

Immunogen

An E.coli-derived zebrafish Rab3Gap1 recombinant protein (amino acids N109-Q798) was used as the immunogen for the Zebrafish Rab3Gap1 antibody.

Storage

After reconstitution, the Zebrafish Rab3Gap1 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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