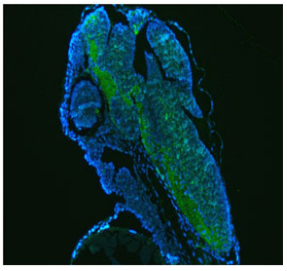
Zebrafish Gnao1a Antibody / Guanine nucleotide-binding protein G(o) subunit alpha (RZ1172)

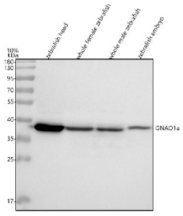
Catalog No.	Formulation	Size
RZ1172	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

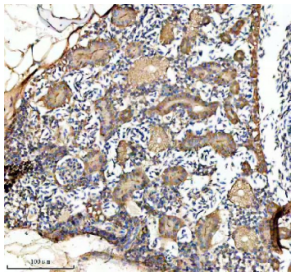
Availability	2-3 weeks
Species Reactivity	Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity chromatography
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q6PBP1
Localization	Cytoplasm, cell membrane
Applications	Western blot: 0.5-1 ug/ml Immunohistochemistry (FFPE): 2-5 ug/ml Immunofluorescence: 5 ug/ml
Limitations	This Zebrafish Gnao1a antibody is available for research use only.



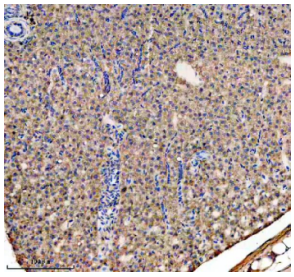
Zebrafish Gnao1a Antibody Embryo IF. Immunofluorescent staining of FFPE zebrafish embryo tissue with Zebrafish Gnao1a antibody (green) and DAPI nuclear stain (blue). HIER: steam section in pH8 EDTA buffer for 20 min.



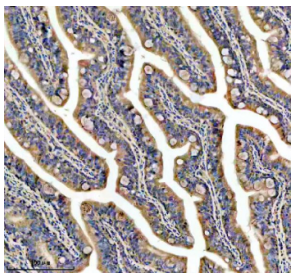
Zebrafish Gnao1a Antibody WB. Western blot analysis of Gnao1a protein using Zebrafish Gnao1a antibody and 1) zebrafish head, 2) whole female zebrafish, 3) whole male zebrafish and 4) zebrafish embryo tissue lysate. Predicted molecular weight ~40 kDa.



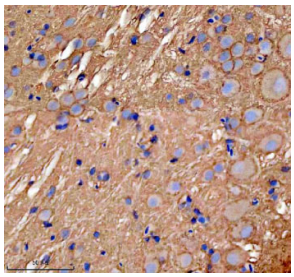
Zebrafish Gnao1a Antibody Kidney Tissue IHC. Immunohistochemistry staining of FFPE zebrafish kidney tissue with Zebrafish Gnao1a antibody, HRP secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Gnao1a Antibody Liver Tissue IHC. Immunohistochemistry staining of FFPE zebrafish liver tissue with Zebrafish Gnao1a antibody, HRP secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Gnao1a Antibody Colon Tissue IHC. Immunohistochemistry staining of FFPE zebrafish colon tissue with Zebrafish Gnao1a antibody, HRP secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Gnao1a Antibody Brain Tissue IHC. Immunohistochemistry staining of FFPE zebrafish brain tissue with Zebrafish Gnao1a antibody, HRP secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.

Description

Zebrafish (Danio rerio) Gnao1a antibody detects Gnao1a, a G alpha subunit that mediates signaling by inhibitory G protein-coupled receptors (GPCRs). Encoded in zebrafish by the gnao1a gene, Guanine nucleotide-binding protein Go subunit alpha regulates neuronal excitability, synaptic transmission, vesicle release, and developmental signaling pathways. Go proteins represent one of the most abundant G alpha subtypes in the vertebrate nervous system, and their activity modulates ion channels, second-messenger pathways, and cytoskeletal dynamics. Because these signaling processes shape early neural patterning and circuit function, Zebrafish Gnao1a antibody reagents support research in GPCR signaling, neurodevelopment, and synaptic physiology.

Go is activated when GPCRs promote GDP-GTP exchange on the Gnao1a subunit, allowing dissociation of G alpha and G beta gamma complexes. These components regulate effectors including voltage-gated calcium channels, inward-rectifier potassium channels, adenylyl cyclases, and regulators of vesicle trafficking. In zebrafish embryos, gnao1a expression is enriched in developing neural tissues such as the hindbrain, spinal cord, retina, and cranial sensory structures. These regions rely on Go-dependent modulation of membrane excitability and neurotransmitter release to refine early neuronal connectivity.

During neurodevelopment, Go signaling influences axon guidance, synaptic maturation, and activity-dependent plasticity. Gnao1a helps tune firing thresholds and enhance or dampen synaptic communication depending on receptor context. Zebrafish provide a powerful model for observing these processes, as gnao1a-dependent phenotypes can alter locomotor behaviors, sensory processing, or neuronal patterning. Because Go is a major inhibitory regulator, disruptions in its activity can lead to excessive neurotransmission, impaired circuit formation, or altered developmental timing.

Beyond synaptic roles, Guanine nucleotide-binding protein Go subunit alpha participates in GPCR pathways that regulate cell migration, proliferation, and morphogenetic movements during embryogenesis. In vertebrates, Go has been implicated in controlling cytoskeletal remodeling and guidance cues that position neurons and glial cells. Similar mechanisms likely occur in zebrafish, where coordinated cell movements shape the neural tube, craniofacial structures, and sensory ganglia.

At the molecular level, Gnao1a contains conserved GTP-binding motifs and switch regions that undergo conformational changes when activated. These changes allow Go to regulate its effectors and reassemble with G beta gamma subunits following GTP hydrolysis. Subcellular localization is primarily at the plasma membrane, but Go can also associate with intracellular membranes and vesicular compartments involved in neurotransmitter release and endocytosis.

Go signaling interacts with broader networks including MAPK, calcium signaling, and cAMP pathways. These interactions help integrate extracellular cues with intracellular responses that guide neuronal differentiation and synaptic refinement. Because zebrafish embryos develop rapidly, proper Go function ensures that signaling thresholds are maintained throughout dynamic developmental transitions.

A Zebrafish Gnao1a antibody is suitable for research applications such as western blotting, immunohistochemistry, and assays examining GPCR signaling, neuronal maturation, synaptic function, and developmental patterning. This antibody targets Guanine nucleotide-binding protein Go subunit alpha for studies involving inhibitory G protein signaling and vertebrate neurobiology. NSJ Bioreagents provides the Zebrafish Gnao1a antibody to support research in neuronal signaling and developmental physiology.

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

Application Notes

Optimal dilution of the Zebrafish Gnao1a antibody should be determined by the researcher.

Immunogen

An E.coli-derived zebrafish Gnao1a recombinant protein (amino acids C3-R179) was used as the immunogen for the Zebrafish Gnao1a antibody.

Storage

After reconstitution, the Zebrafish Gnao1a 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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