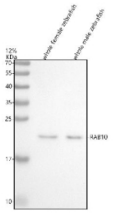
Zebrafish Rab10 Antibody (RZ1019)

Catalog No.	Formulation	Size
RZ1019	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	Q6DGV5
Applications	Western Blot : 0.5-1 ug/ml
Limitations	This Zebrafish Rab10 antibody is available for research use only.



Zebrafish Rab10 Antibody WB. Western blot analysis of Rab10 protein using Zebrafish Rab10 antibody and 1) whole female zebrafish and 2) 1) whole male zebrafish tissue lysate. Predicted molecular weight ~22 kDa.

Description

Zebrafish (Danio rerio) Rab10 antibody recognizes Rab10, a conserved small GTP binding protein that regulates membrane trafficking, endosomal transport, and polarized delivery of cargo within Danio rerio cells. Rab10 is encoded by the zebrafish rab10 gene located on chromosome 20 and functions as part of the Rab family of GTPases that orchestrate vesicle budding, movement, tethering, and fusion. Rab10 cycles between inactive GDP bound and active GTP bound states, enabling it to coordinate specific steps in exocytic and endocytic pathways. In zebrafish embryos, Rab10 is widely expressed across developing tissues and is enriched in neural progenitors, epithelial layers, muscle precursors, and early endodermal organs where directed membrane trafficking supports morphogenesis. Subcellular distribution places Rab10

on early endosomes, recycling endosomes, tubular membrane compartments, and regions associated with polarized transport.

Rab10 plays a crucial role in polarized trafficking events required for establishing epithelial and neuronal architecture. In vertebrate models, Rab10 directs basolateral cargo delivery, regulates GLUT transporter trafficking, and supports membrane expansion during cell growth. In zebrafish, these conserved functions contribute to processes such as neural tube formation, epithelial sheet organization, and coordinated cell movement during early embryonic stages. Rab10 mediated recycling also supports the distribution of adhesion molecules, growth factor receptors, and transporters that influence signaling gradients and cell communication during tissue patterning.

During early development, zebrafish Rab10 helps regulate morphogenetic movements that depend on active cytoskeletal remodeling and membrane turnover. Rab10 interacts with motor proteins, tethering complexes, and phosphoinositide binding adaptors to direct vesicles to specific membrane domains. These processes influence cell polarity, epithelial morphogenesis, and coordinated tissue extension. Rab10 also participates in endosome-to-Golgi and endosome-to-plasma membrane recycling pathways that maintain membrane composition and receptor availability, supporting signaling networks essential for organ formation.

Rab10 has emerging roles in neuronal development and axonal trafficking. In zebrafish, Rab10 enriched vesicles contribute to growth cone dynamics, delivery of synaptic components, and neurite extension. Altered Rab10 signaling can impair axonal pathfinding or synaptic organization, highlighting its importance in neural circuit formation. Rab10 also supports muscle development by regulating membrane turnover during myofiber growth and helping maintain membrane integrity in actively contracting tissues.

Rab10 dependent trafficking intersects with stress responses and metabolic pathways. Vertebrate studies link Rab10 to autophagy regulation, endoplasmic reticulum dynamics, and insulin signaling. In zebrafish, these functions are relevant during periods of metabolic change, environmental challenge, or injury. Isoform variation may arise from alternative gene regulation during development and could influence the balance between endosomal recycling and exocytic transport.

This Zebrafish Rab10 antibody is suitable for detecting Rab10 in research focused on membrane trafficking, epithelial polarity, neuronal development, vesicle recycling, and embryonic morphogenesis in zebrafish. It supports studies examining Rab family GTPase networks, endosomal sorting mechanisms, polarized cargo delivery, and developmental consequences of disrupted vesicle transport. NSJ Bioreagents provides this antibody within its zebrafish and cell biology research 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 Rab10 antibody should be determined by the researcher.

Immunogen

An E.coli-derived zebrafish Rab10 recombinant protein (amino acids A153-C200) was used as the immunogen for the Zebrafish Rab10 antibody.

Storage

After reconstitution, the Zebrafish Rab10 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.