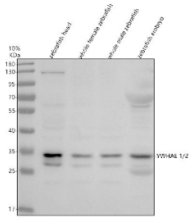
Zebrafish Ywhae Antibody / 14-3-3 epsilon / Isoforms 1/2 (RZ1052)

Catalog No.	Formulation	Size
RZ1052	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	Q7ZW20, A0A8M9Q1K3
Applications	Western Blot : 0.5-1 ug/ml
Limitations	This Zebrafish Ywhae antibody is available for research use only.



Western blot analysis of Ywhae1/2 protein using Zebrafish Ywhae antibody and 1) zebrafish head, 2) whole female zebrafish, 3) whole male zebrafish and 4) zebrafish embryo tissue lysate. Predicted molecular weight ~29 kDa (isoform 1) and ~27 kDa (isoform 2).

Description

Zebrafish (Danio rerio) Ywhae antibody recognizes 14-3-3 epsilon, detecting isoforms 1 and 2 encoded by the zebrafish ywhae gene. Ywhae belongs to the conserved 14-3-3 adaptor protein family, which regulates diverse signaling pathways by binding phosphorylated client proteins and modulating their localization, stability, and activity. In Danio rerio, Ywhae is expressed from the earliest stages of embryogenesis and shows pronounced enrichment in developing brain, neural tube, retina, somites, heart, vasculature, and endoderm-derived tissues such as liver and pancreas. Subcellular localization includes cytoplasm, nucleus, and membrane-associated compartments, reflecting its involvement in multiple signaling networks.

14-3-3 epsilon plays fundamental roles in early cell signaling integration. By interacting with a broad set of phosphorylated proteins, Ywhae regulates cell cycle progression, cytoskeletal remodeling, apoptosis suppression, metabolic regulation, and transcription factor activity. During zebrafish embryogenesis, these functions help coordinate morphogenetic events such as neural tube closure, brain patterning, somitogenesis, and cardiac tube formation. Ywhae maintains signaling fidelity by stabilizing active or inactive forms of client proteins and guiding their subcellular distribution. Isoforms 1 and 2 may contribute distinct tissue-specific or temporal regulatory features.

Neural development depends heavily on Ywhae-mediated signaling. In the forming brain and spinal cord, 14-3-3 epsilon supports neural progenitor proliferation, regulates polarity cues, influences axon pathfinding, and promotes neuronal survival during metabolic and oxidative challenges. Ywhae also interacts with proteins involved in synaptic organization, making it important for early circuit assembly. Because zebrafish neural tissue experiences rapid growth and continuous structural remodeling, Ywhae ensures proper coordination of kinase cascades that govern neurogenesis.

Cardiac and vascular development also rely on 14-3-3 epsilon function. Ywhae regulates signaling pathways controlling myocardial differentiation, heart looping, endothelial migration, and vascular lumen formation. Perturbation of ywhae expression can alter cardiac contractility, impair chamber maturation, and disrupt angiogenesis. Its interactions with cytoskeletal regulators and survival pathways help maintain cellular integrity within mechanically active tissues like developing myocardium and vasculature.

In somites and skeletal muscle precursors, Ywhae influences cytoskeletal alignment, adhesion dynamics, and early myofiber organization. Through its interactions with contractile and signaling proteins, Ywhae helps coordinate muscle morphogenesis and integration of force-generating structures. Endoderm-derived organs similarly depend on Ywhae for regulating metabolic and survival pathways required for liver and pancreas development, aligning intracellular signaling with organ growth and differentiation.

Beyond structural development, 14-3-3 epsilon contributes to stress-response networks. Zebrafish embryos frequently encounter metabolic, oxidative, and environmental stresses during rapid growth. Ywhae stabilizes key regulators of apoptosis, MAPK signaling, and metabolic adaptation, providing essential mechanisms for developmental resilience. Isoform-specific expression may allow tissues to fine-tune stress sensitivity during distinct stages of organogenesis.

This Zebrafish Ywhae antibody is suitable for detecting 14-3-3 epsilon isoforms 1 and 2 in research focused on cell signaling, neural development, cardiac and vascular morphogenesis, cytoskeletal regulation, and stress-response pathways in zebrafish. It supports studies examining adaptor-mediated signaling integration and developmental phenotypes arising from altered Ywhae activity. NSJ Bioreagents provides this reagent within its zebrafish and signaling-regulation antibody collection.

Application Notes

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

Immunogen

An E.coli-derived zebrafish Ywhae1/2 recombinant protein (amino acids Q16-L163) was used as the immunogen for the Zebrafish Ywhae antibody. This antibody will detect the 1 and 2 isoforms.

Storage

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