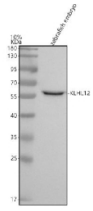
Zebrafish Klhl12 Antibody / Kelch-like protein 12 (RZ1009)

Catalog No.	Formulation	Size
RZ1009	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	Q5U374
Applications	Western Blot : 0.5-1 ug/ml
Limitations	This Zebrafish Klhl12 antibody is available for research use only.



Western blot analysis of Klhl12 protein using Klhl12 antibody and zebrafish embryo tissue lysate. The predicted molecular weight of Klhl12 is ~63 kDa.

Description

Zebrafish (Danio rerio) Klhl12 antibody recognizes Kelch-like protein 12, a conserved BTB-Kelch family member encoded by the zebrafish klhl12 gene on chromosome 15. Kelch-like proteins act as substrate adaptors for Cullin-RING ubiquitin ligases, enabling selective ubiquitination of target proteins that regulate cytoskeletal dynamics, intracellular transport, and developmental signaling. Klhl12 contains an N-terminal BTB domain that mediates binding to Cullin 3 and a C-terminal Kelch-repeat ÃŽÂ²-propeller domain that recognizes specific substrates. In zebrafish, Klhl12 is expressed during early embryogenesis, particularly in tissues undergoing rapid morphogenesis such as the neural tube, somites, craniofacial mesenchyme, and developing sensory structures. Subcellular localization studies indicate that Klhl12 resides in the cytoplasm, with enrichment near vesicular compartments, actin-associated structures, and organelles involved in

trafficking and secretion.

Kelch-like protein 12 participates in pathways governing vesicle transport, Golgi organization, and endoplasmic reticulum to Golgi trafficking. In vertebrates, KLHL12 is known to regulate collagen export and secretory pathway dynamics by influencing COPII vesicle size through ubiquitination of Sec31. These functions are conserved across species, and zebrafish Klhl12 is implicated in regulating extracellular matrix deposition, tissue architecture, and morphogen diffusion during development. Altered Klhl12 activity affects assembly of secretory machinery, causing defects in protein trafficking important for skeletal patterning and organogenesis. Its role in Golgi dynamics places Klhl12 at the interface between membrane transport and cytoskeletal organization.

Developmentally, klhl12 expression increases during somitogenesis and early organ formation, reflecting its contribution to cellular remodeling and secretion dependent processes. Zebrafish studies suggest that disruption of Klhl12 perturbs craniofacial cartilage formation, axon pathfinding, and notochord integrity. Because secreted signaling molecules shape developmental gradients, altered Klhl12 function can influence signaling pathways including Wnt, FGF, and Hedgehog by modulating ligand transport and extracellular matrix interactions. Klhl12 has also been linked to cilia associated pathways and may support trafficking of proteins required for proper ciliary function, an important aspect of left-right patterning and sensory organ development.

Kelch-like family proteins have growing relevance in vertebrate disease contexts, including neurodevelopmental syndromes, ciliopathies, and skeletal disorders. While zebrafish-specific disease models for Klhl12 are still being established, its conserved role in protein trafficking and cytoskeletal coordination makes it a valuable target for studying developmental processes sensitive to secretion and membrane dynamics. Zebrafish embryos offer unique advantages for imaging Golgi structure, vesicle formation, and live-cell trafficking, making Klhl12 an important marker for studies of intracellular organization and secretory pathway regulation under physiological and stress conditions.

This Zebrafish Klhl12 antibody is suitable for detecting Kelch-like protein 12 in research focused on protein trafficking, vesicle formation, extracellular matrix deposition, craniofacial development, neural patterning, and cytoskeletal organization in zebrafish. It supports studies examining Cullin 3 dependent ubiquitination, Golgi function, secretory pathway regulation, and developmental responses to genetic or environmental perturbation. NSJ Bioreagents provides this reagent as part of its zebrafish and developmental cell biology antibody collection.

Application Notes

Optimal dilution of the Zebrafish Klhl12 antibody should be determined by the researcher.

Immunogen

An E.coli-derived zebrafish Klhl12 recombinant protein (amino acids R23-V327) was used as the immunogen for the Zebrafish Klhl12 antibody.

Storage

After reconstitution, the Zebrafish Klhl12 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.