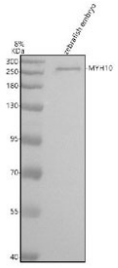
Zebrafish Myosin 10 Antibody / MYH10 (RZ1090)

Catalog No.	Formulation	Size
RZ1090	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	A0A8M3BA62
Applications	Western Blot : 0.5-1 ug/ml
Limitations	This Zebrafish Myosin 10 antibody is available for research use only.



Western blot analysis of MYH10 protein using Myosin 10 antibody and zebrafish embryo tissue lysate. The predicted molecular weight of Myosin 10 is ~229 kDa.

Description

Zebrafish (Danio rerio) Myosin 10 antibody detects Myosin 10, an unconventional myosin motor protein involved in filopodia formation, intracellular cargo transport, and cytoskeletal organization. Encoded in zebrafish by the myh10 gene, Myosin 10 is structurally conserved across vertebrates, carrying a motor domain for ATP dependent actin binding, a neck region with IQ motifs for calmodulin interaction, and a tail domain containing MyTH4 and FERM motifs that mediate binding to microtubules, integrins, and membrane associated proteins. These domains enable Myosin 10 to function as a critical driver of cell protrusion dynamics, adhesion regulation, and polarized cell movement, making MYH10 antibody reagents valuable tools for developmental and cytoskeletal studies.

Myosin 10 is best known for its role in generating and stabilizing filopodia, thin actin rich projections that guide cell migration and environmental sensing. In zebrafish embryos, myh10 expression is enriched in developing neural tissues, migrating neural crest cells, endothelial structures, and epithelial layers undergoing morphogenesis. Through its motor activity and cargo binding capability, Myosin 10 transports integrins, guidance receptors, and cytoskeletal components to filopodial tips, supporting directed cell movement during early tissue patterning.

Beyond migration, Myosin 10 contributes to mitotic spindle positioning, centrosome dynamics, and adhesion turnover. The MyTH4 FERM domains allow the protein to bridge microtubules and actin filaments, integrating structural networks required for division and morphogenesis. In vertebrate models, disruptions in Myosin 10 impair neural tube closure, vascular sprouting, and epithelial integrity. Zebrafish studies suggest similar functional themes, with altered myh10 activity leading to defects in craniofacial development, neuronal pathfinding, and vessel remodeling.

Myosin 10 also plays roles in signaling pathways tied to polarity, adhesion, and mechanotransduction. By transporting integrins and adhesion regulators, it influences the formation and maturation of focal adhesions that guide substrate attachment and tension responses. In the nervous system, Myosin 10 contributes to axon extension and guidance by delivering receptors that interpret environmental cues. Its involvement in cytoskeletal cross talk places it at the intersection of Rho GTPase signaling, actin polymerization networks, and microtubule stabilization.

Subcellular localization of Myosin 10 includes filopodial tips, the leading edge of migrating cells, mitotic spindles, and the cortex of dividing cells. Known co localization partners include actin filaments, integrin complexes, microtubules, and adaptor proteins involved in trafficking or cytoskeletal alignment. These associations highlight the protein's multifunctional role across dynamic cellular processes central to development.

The Zebrafish Myosin 10 antibody is suitable for research applications such as immunohistochemistry, western blotting, and related assays that examine actin based motility and filopodial dynamics. This reagent detects endogenous Myosin 10 without implying epitope mapping or literature validated specificity. NSJ Bioreagents provides the Zebrafish Myosin 10 antibody to support studies in neural crest migration, vascular development, cytoskeletal coordination, and cell polarity in vertebrate embryos.

Application Notes

Optimal dilution of the Zebrafish Myosin 10 antibody should be determined by the researcher.

Immunogen

An E.coli-derived zebrafish MYH10 recombinant protein (amino acids M4-K37) was used as the immunogen for the Zebrafish Myosin 10 antibody.

Storage

After reconstitution, the Zebrafish Myosin 10 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.