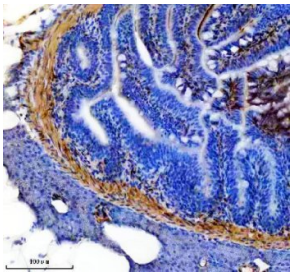
Zebrafish TPM1 Antibody / Tropomyosin Alpha-1 Chain Antibody (RZ1416)

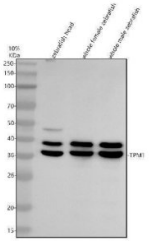
Catalog No.	Formulation	Size
RZ1416	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Species Reactivity	Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Buffer	Lyophilized from a buffered saline solution containing 2% trehalose. Reconstitute with 0.2 mL distilled water to yield a final antibody concentration of 500 ug/mL.
UniProt	A0A1L6UW63
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml
Limitations	This Zebrafish TPM1 Antibody / Tropomyosin Alpha-1 Chain Antibody is available for research use only.



Zebrafish TPM1 Antibody Colon IHC. Immunohistochemical analysis of paraffin-embedded zebrafish colon tissue using Zebrafish TPM1 Antibody / Tropomyosin Alpha-1 Chain Antibody demonstrates strong HRP-DAB brown staining within the smooth muscle layers surrounding the intestinal wall. The staining pattern is consistent with expression of TPM1, an actin-binding protein that stabilizes actin filaments and regulates actin-myosin interactions required for muscle contraction. Positive immunoreactivity highlights the contractile apparatus of gastrointestinal smooth muscle and supports the essential role of TPM1 in muscle structure, force generation, and maintenance of tissue integrity. Heat-induced antigen retrieval was performed in EDTA buffer. Tissue sections were blocked with 10% goat serum and incubated with TPM1 antibody (2 ug/ml) overnight at 4Â°C, followed by Peroxidase Conjugated Goat Anti-rabbit IgG and DAB chromogen detection.



Zebrafish TPM1 Antibody Multi-Tissue WB. Western blot analysis of 1) zebrafish head tissue lysate, 2) whole female zebrafish lysate, and 3) whole male zebrafish lysate using Zebrafish TPM1 Antibody / Tropomyosin Alpha-1 Chain Antibody. Prominent immunoreactive bands are detected at approximately 36-40 kDa in all samples, consistent with expression of TPM1. Tropomyosin proteins are known to exist as multiple isoforms generated through alternative splicing and differential promoter usage, resulting in closely migrating bands that are commonly observed by western blot analysis. TPM1 functions as a key actin-binding protein that stabilizes actin filaments and regulates actin-myosin interactions required for muscle contraction, sarcomere organization, and cytoskeletal integrity. The observed expression pattern supports the widespread role of TPM1 in muscle structure and contractile function throughout zebrafish tissues. Electrophoresis was performed on a 10% SDS-PAGE gel under reducing conditions. Predicted molecular weight: ~32 kDa. Observed molecular weights: ~36-40 kDa.

Description

Zebrafish TPM1 Antibody / Tropomyosin Alpha-1 Chain Antibody recognizes TPM1, a highly conserved actin-binding protein that forms an essential component of the contractile apparatus in muscle cells. Tropomyosin molecules associate longitudinally along actin filaments, where they stabilize filament structure and regulate interactions between actin and myosin during muscle contraction. Through these functions, TPM1 plays a critical role in sarcomere organization, force generation, and maintenance of normal muscle physiology.

Zebrafish TPM1 Antibody is widely used for studying muscle development and vertebrate cardiogenesis. During embryonic development, TPM1 contributes to the assembly and maturation of contractile structures required for proper cardiac and skeletal muscle function. Expression of TPM1 is closely associated with developing myofibers and cardiac tissue, making it an important marker for investigations of muscle differentiation, myofibril formation, and tissue morphogenesis. Because zebrafish embryos provide direct visualization of developing musculature and heart structures, TPM1 serves as a valuable target for developmental biology research.

Zebrafish TPM1 Antibody is also useful for examining cytoskeletal organization and actin filament regulation. Tropomyosin proteins help define functional actin filament populations and influence interactions with numerous actin-associated proteins. By regulating filament stability and accessibility, TPM1 contributes to cellular architecture, mechanical integrity, and contractile function. These properties have established TPM1 as an important marker for studies of actin dynamics and cytoskeletal biology.

Zebrafish TPM1 Antibody supports research involving cardiac development, skeletal muscle biology, contractile protein regulation, and cardiovascular physiology. The strong conservation of tropomyosin proteins across vertebrate species has made zebrafish a valuable model for investigating the molecular mechanisms that govern muscle function and heart development. Analysis of TPM1 expression can provide insights into sarcomere assembly, contractility, and the regulation of muscle-specific gene expression programs.

Zebrafish TPM1 Antibody is additionally relevant for studies of muscle disorders and cardiovascular disease mechanisms. Alterations in TPM1 expression or function can affect contractile performance and tissue integrity, leading to abnormalities in muscle development and cardiac physiology. As a result, TPM1 remains an important biomarker for investigations of myofibrillar organization, muscle function, and vertebrate cardiovascular biology.

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

Application Notes

The optimal working dilution of the Zebrafish TPM1 Antibody / Tropomyosin Alpha-1 Chain Antibody should be determined empirically by the investigator.

Immunogen

An E.coli-derived Zebrafish TPM1 recombinant protein (amino acids K7-K264) was used as the immunogen for the Zebrafish TPM1 Antibody.

Storage

After reconstitution, the Zebrafish TPM1 Antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

Zebrafish TPM1 Antibody, Zebrafish Tropomyosin Alpha-1 Chain Antibody, Zebrafish Alpha Tropomyosin Antibody, Zebrafish Sarcomeric Tropomyosin Antibody, Zebrafish Actin Binding Protein Antibody, Zebrafish Muscle Filament Protein Antibody

Copyright © NSJ Bioreagents. All rights reserved.