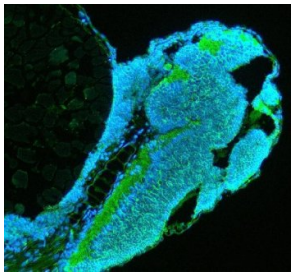
Zebrafish TUBA1A Antibody / Alpha Tubulin (RZ1377)

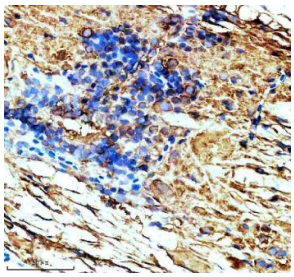
Catalog No.	Formulation	Size
RZ1377	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

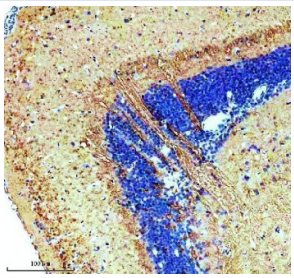
Species Reactivity	Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Buffer	Lyophilized from a buffered saline solution containing 2% trehalose. Reconstitute with 0.2 mL distilled water to yield a final antibody concentration of 500 ug/mL.
UniProt	Q6NWK7
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Immunofluorescence: 5ug/ml
Limitations	This Zebrafish TUBA1A Antibody / Alpha Tubulin is available for research use only.



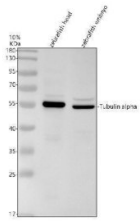
Zebrafish TUBA1A Antibody Embryo IF. Immunofluorescent staining of paraffin-embedded zebrafish embryo tissue using Zebrafish TUBA1A Antibody / Alpha Tubulin Antibody demonstrates strong green fluorescence throughout developing neural and embryonic tissue structures, consistent with the widespread distribution of alpha tubulin-containing microtubule networks during embryogenesis. TUBA1A is a highly conserved cytoskeletal protein required for microtubule assembly, neuronal differentiation, intracellular transport, and tissue morphogenesis. The staining pattern highlights regions of active cellular organization and developmental growth, while DAPI (blue) counterstains cell nuclei. Heat-mediated antigen retrieval was performed in EDTA buffer. Sections were blocked with 10% goat serum and incubated overnight at 4Â°C with 5 Âµg/ml primary antibody, followed by DyLight 488-conjugated goat anti-rabbit IgG secondary antibody at 1:500 dilution for 30 minutes at 37Â°C.



Zebrafish TUBA1A Antibody Spinal Cord IHC. Immunohistochemical staining of paraffin-embedded zebrafish spinal cord tissue using Zebrafish TUBA1A Antibody / Alpha Tubulin Antibody demonstrates distinct cytoplasmic HRP-DAB brown staining within spinal cord cellular populations and surrounding neural structures. The staining pattern is consistent with expression of Alpha Tubulin (TUBA1A), a highly conserved microtubule-associated protein required for cytoskeletal organization, neuronal differentiation, axonal growth, and intracellular transport. TUBA1A immunoreactivity highlights neural tissue architecture and cellular organization within the developing zebrafish spinal cord. Heat-mediated antigen retrieval was performed in EDTA buffer. Sections were blocked with 10% goat serum and incubated overnight at 4Â°C with 2 Âµg/ml primary antibody, followed by peroxidase-conjugated goat anti-rabbit IgG secondary antibody for 30 minutes at 37Â°C. Signal was visualized using DAB chromogen.



Zebrafish TUBA1A Antibody Brain IHC. Immunohistochemical staining of paraffin-embedded zebrafish brain tissue using Zebrafish TUBA1A Antibody / Alpha Tubulin Antibody demonstrates prominent cytoplasmic HRP-DAB brown staining throughout neural tissue compartments. The staining pattern is consistent with expression of Alpha Tubulin (TUBA1A), a highly conserved microtubule-associated protein that plays essential roles in neuronal differentiation, axonal extension, intracellular transport, and nervous system development. TUBA1A immunoreactivity highlights neuronal architecture and microtubule-rich cellular processes within the zebrafish brain, supporting its utility as a marker of cytoskeletal organization during neurodevelopment. Heat-mediated antigen retrieval was performed in EDTA buffer. Sections were blocked with 10% goat serum and incubated overnight at 4Â°C with 2 Âµg/ml primary antibody, followed by peroxidase-conjugated goat anti-rabbit IgG secondary antibody for 30 minutes at 37Â°C. Signal was visualized using DAB chromogen.



Zebrafish TUBA1A Antibody Western Blot. Western blot analysis of zebrafish head tissue lysate (lane 1) and zebrafish embryo tissue lysate (lane 2) using Zebrafish TUBA1A Antibody / Alpha Tubulin Antibody demonstrates a distinct band at approximately 50 kDa, consistent with the expected molecular weight of Alpha Tubulin (TUBA1A). TUBA1A is a highly conserved microtubule-associated protein that contributes to cytoskeletal organization, intracellular transport, neuronal differentiation, and embryonic development. Detection of the expected molecular weight band in both zebrafish head and embryo samples supports expression of TUBA1A in neural and developing tissues and demonstrates the utility of this antibody for western blot applications. Electrophoresis was performed using a 10% SDS-PAGE gel under reducing conditions with 30 Âµg of protein loaded per lane. Signal was visualized using HRP-conjugated secondary antibody and ECL detection.

Description

Zebrafish TUBA1A Antibody / Alpha Tubulin Antibody is useful for studying Tubulin Alpha 1A (TUBA1A), a highly conserved microtubule-associated cytoskeletal protein that serves as a fundamental structural component of microtubules. TUBA1A participates in the assembly and maintenance of the microtubule network, which is essential for cellular architecture, intracellular transport, mitotic spindle formation, cell migration, and tissue morphogenesis. Because microtubules are required for numerous developmental and physiologic processes, TUBA1A plays a critical role throughout zebrafish embryogenesis and organ development.

In zebrafish, TUBA1A expression is particularly important within the developing nervous system, where microtubule dynamics regulate neuronal migration, axon extension, neurite outgrowth, and neuronal differentiation. Proper organization of alpha-tubulin-containing microtubules is required for the establishment of neural circuits and maintenance of cellular polarity. As a result, TUBA1A is frequently studied in developmental neurobiology, nervous system regeneration, and investigations of cytoskeletal organization during embryonic development.

Microtubules function as highly dynamic intracellular structures that continuously undergo assembly and disassembly in response to developmental and environmental signals. Alpha tubulin proteins such as TUBA1A combine with beta tubulin subunits to form heterodimers that polymerize into microtubules. These structures provide mechanical support while also serving as intracellular transport tracks for motor proteins that move organelles, vesicles, and signaling complexes throughout the cell. Consequently, TUBA1A contributes to numerous cellular processes beyond structural support alone.

Zebrafish has become an important model organism for studying microtubule biology because of its optical transparency, rapid development, and extensive regenerative capabilities. TUBA1A has attracted particular attention in studies examining central nervous system development, retinal biology, neuronal regeneration, and tissue repair. Alterations in tubulin function can affect cell division, neuronal connectivity, tissue patterning, and developmental signaling pathways, making TUBA1A a valuable target for developmental and cell biology research.

Because alpha tubulin proteins are widely expressed and highly conserved, TUBA1A is frequently utilized as a marker of cytoskeletal organization and cellular morphology. Antibodies against zebrafish TUBA1A can assist investigations involving embryonic development, neurodevelopment, regeneration, intracellular transport, and microtubule-associated signaling pathways. Analysis of TUBA1A expression may also provide insight into mechanisms governing cellular architecture, tissue formation, and nervous system function.

Zebrafish TUBA1A antibodies are commonly used in immunohistochemistry, immunofluorescence, western blotting, and related protein detection applications to evaluate alpha tubulin expression and localization. These reagents support studies of microtubule dynamics, neuronal development, regenerative biology, cellular transport mechanisms, and cytoskeletal organization in zebrafish research models.

Learn more about the role of Alpha Tubulin in microtubule assembly, neuronal development, intracellular transport, and cytoskeletal organization on our TUBA1A Antibody page.

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 TUBA1A Antibody / Alpha Tubulin should be determined empirically by the investigator.

Immunogen

An E.coli-derived Zebrafish Alpha Tubulin/TUBA1A recombinant protein (amino acids M1-G436) was used as the immunogen for the Zebrafish TUBA1A Antibody.

Storage

After reconstitution, the Zebrafish TUBA1A 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 Alpha Tubulin Antibody, Zebrafish Tubulin Alpha 1A Antibody, Zebrafish Alpha-Tubulin Antibody, Zebrafish Neuronal Tubulin Antibody, Zebrafish Microtubule Protein Antibody, Zebrafish Cytoskeletal Tubulin Antibody

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