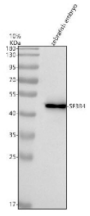
Zebrafish Sf3b4 Antibody / Splicing factor 3B subunit 4 (RZ1022)

Catalog No.	Formulation	Size
RZ1022	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	Q6NWB3
Applications	Western Blot : 0.5-1 ug/ml
Limitations	This Zebrafish Sf3b4 antibody is available for research use only.



Western blot analysis of Sf3b4 protein using Zebrafish Sf3b4 antibody and zebrafish embryo tissue lysate. The predicted molecular weight of Sf3b4 is ~49 kDa.

Description

Zebrafish (Danio rerio) Sf3b4 antibody recognizes Splicing factor 3B subunit 4, a core component of the U2 snRNP complex involved in early steps of pre mRNA spliceosome assembly. Sf3b4 is encoded by the zebrafish sf3b4 gene on chromosome 2 and is evolutionarily conserved across vertebrates. As part of the SF3B complex, Sf3b4 contributes to the recognition of branch point sequences and stabilization of spliceosome structure during intron removal. In Danio rerio, Sf3b4 is expressed broadly during early embryogenesis and is enriched in proliferative and differentiating tissues such as neural progenitors, somites, craniofacial mesenchyme, the developing eye, and endodermal organ primordia. Subcellular localization is predominantly nuclear, consistent with its function in co-transcriptional RNA processing.

Splicing factor 3B subunit 4 plays essential roles in regulating pre mRNA splicing fidelity. By stabilizing interactions between U2 snRNP and pre mRNA, Sf3b4 ensures accurate recognition of intron branch sites and supports alternative splicing events required for tissue-specific gene expression. During zebrafish development, spliceosome activity must rapidly adapt to different cell fates and transcriptional programs, making Sf3b4 vital for proper neural induction, mesoderm patterning, and organogenesis. Sf3b4 dependent splicing influences transcripts involved in signaling pathways such as FGF, Wnt, and Hedgehog, all of which require precise splicing to generate correct isoforms during early pattern formation.

Developmental studies show that sf3b4 is required for normal craniofacial development in vertebrates, and zebrafish models have been instrumental in demonstrating how spliceosome defects disrupt pharyngeal arch formation and neural crest-derived structures. Reduction of Sf3b4 function can lead to abnormal cartilage patterning, impaired neural development, and defects in tissue morphogenesis. Because many neural and craniofacial regulators rely on alternative splicing, Sf3b4 activity influences lineage specification and differentiation outcomes. Expression increases in regions undergoing rapid growth and morphogenesis, reflecting high demand for splicing precision.

Sf3b4 also participates in RNA quality control and interacts with additional spliceosomal factors that regulate intron retention, exon definition, and splice site selection. In zebrafish, these processes impact developmental resilience under environmental stress, where altered splicing can modify the expression of stress-response genes. Sf3b4 is relevant in human disease contexts, including craniofacial malformation disorders and spliceosome-associated syndromes, and zebrafish models provide valuable insight into conserved developmental mechanisms.

At the molecular level, Sf3b4 contains RNA recognition motifs and interfaces with SF3B1, SF3B2, and other U2-associated proteins to form a stable structural platform for spliceosome assembly. Isoform variation in zebrafish may arise from alternative promoter usage or differential transcriptional regulation across developmental stages. Sf3b4 influences the production of protein isoforms essential for neural connectivity, muscle maturation, and epithelial organization, linking splicing regulation directly to morphogenetic processes.

This Zebrafish Sf3b4 antibody is suitable for detecting Splicing factor 3B subunit 4 in research focused on RNA splicing, spliceosome assembly, neural crest development, craniofacial biology, and embryonic patterning in zebrafish. It supports studies examining alternative splicing regulation, U2 snRNP function, and developmental phenotypes resulting from impaired RNA processing. NSJ Bioreagents provides this reagent within its zebrafish and RNA biology antibody collection.

Application Notes

Optimal dilution of the Zebrafish Sf3b4 antibody should be determined by the researcher.

Immunogen

An E.coli-derived zebrafish Sf3b4 recombinant protein (amino acids M1-A214) was used as the immunogen for the Zebrafish Sf3b4 antibody.

Storage

After reconstitution, the Zebrafish Sf3b4 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.