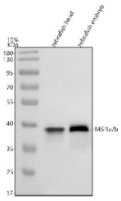
Zebrafish Msi1 Antibody / Musashi 1 / Isoforms a & b (RZ1032)

Catalog No.	Formulation	Size
RZ1032	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	Q5CZN9, Q5BKV4
Applications	Western Blot : 0.5-1 ug/ml
Limitations	This Zebrafish Msi1 antibody is available for research use only.



Western blot analysis of Msi1a/b protein using Zebrafish Msi1 antibody and zebrafish 1) head and 2) embryo tissue lysate. Predicted molecular weight ~39 kDa.

Description

Zebrafish (Danio rerio) Msi1 antibody recognizes Musashi 1, a conserved RNA binding protein encoded by the MSI1 gene. This reagent detects both the a and b isoforms, which share extensive sequence and functional overlap. Musashi 1 is a key post transcriptional regulator highly enriched in neural stem and progenitor cells across vertebrates. It contains two N-terminal RNA recognition motifs that bind specific motifs within the 3 prime untranslated regions of target mRNAs, enabling control over translational repression, mRNA stability, and stem cell maintenance. In developing vertebrate tissues, Musashi 1 localizes predominantly to the cytoplasm of neural progenitors but may also appear in the nucleus during specific regulatory states.

Musashi 1 plays an essential role in regulating cell fate decisions within the central nervous system. Its expression is a hallmark of neural stem and early progenitor populations, where it promotes self-renewal while limiting premature differentiation. Msi1 influences pathways necessary for neural tube patterning, neuroepithelial proliferation, and early brain regionalization. Studies across vertebrate systems show that loss of Musashi function reduces progenitor pool size, disrupts mitotic regulation, and impairs neurogenesis. By repressing translation of differentiation-associated transcripts, Musashi 1 helps maintain progenitor identity and supports the temporal progression of neural development.

Beyond neural progenitors, Musashi 1 participates in the regulation of stem-like populations in other tissues, including intestinal epithelium and developing endocrine organs. Musashi-mediated repression controls transcripts involved in Notch signaling, a major pathway governing stem cell maintenance and lateral inhibition. Through modulation of mRNA stability and translation, Musashi 1 fine-tunes gene expression programs required for tissue renewal and developmental timing. Isoforms a and b appear to retain these conserved functions, with potential differences arising from tissue-specific expression or regulatory modulation.

Musashi 1 also contributes to injury responses and regenerative processes. In vertebrate neural systems, Msi1 expression increases following injury or stress, supporting progenitor reactivation and facilitating repair mechanisms. This makes Musashi 1 a useful marker for examining regenerative responses, neurogenesis, and stem cell behavior. It additionally participates in signaling pathways involving Wnt, Hedgehog, and growth factor receptors that shape progenitor dynamics during development and regeneration.

Aberrant Musashi 1 regulation has been associated with proliferative disorders and oncogenic processes in vertebrates. Its ability to maintain stemness and repress differentiation makes it relevant in the context of cancer stem cell biology, although these roles reflect dysregulated versions of its normal developmental functions. Experimental models highlight the importance of Musashi controlled post transcriptional networks in balancing proliferation, differentiation, and tissue organization.

This Zebrafish (Danio rerio) Msi1 antibody is suitable for detecting both isoforms a and b of Musashi 1 in research focused on neural stem cell biology, progenitor maintenance, developmental neurogenesis, tissue regeneration, and translational control mechanisms. It supports studies examining post transcriptional regulation, RNA binding protein networks, and developmental phenotypes resulting from altered Musashi-dependent signaling. NSJ Bioreagents provides this reagent within its neural development and RNA regulation antibody portfolio.

Application Notes

Optimal dilution of the Zebrafish Msi1 antibody should be determined by the researcher.

Immunogen

An E.coli-derived zebrafish Msi1a/b recombinant protein (amino acids K23-D56) was used as the immunogen for the Zebrafish Msi1 antibody. This antibody will detect the a and b isoforms.

Storage

After reconstitution, the Zebrafish Msi1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.