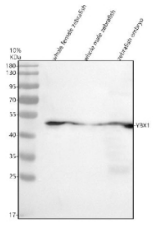
Zebrafish Yb-1 Antibody / Ybx1 / Y-box-binding protein 1 (RZ1174)

Catalog No.	Formulation	Size
RZ1174	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	B5DE31
Applications	Western blot: 0.5-1 ug/ml
Limitations	This Zebrafish Yb-1 antibody is available for research use only.



Zebrafish Yb-1 / Ybx1 Antibody Tissue WB. Western blot analysis of Yb-1 protein using Zebrafish Yb-1 antibody and 1) whole female zebrafish, 2) whole male zebrafish and 3) zebrafish embryo tissue lysate. Predicted molecular weight ~35 kDa.

Description

Zebrafish (Danio rerio) Yb-1 antibody detects Yb-1, a multifunctional DNA- and RNA-binding protein encoded in zebrafish by the ybx1 gene. Also known as Y-box-binding protein 1, Yb-1 regulates transcription, mRNA stability, translation, and cellular stress responses. As a highly conserved cold shock domain protein, Yb-1 influences diverse biological processes including proliferation, differentiation, DNA repair, and early embryonic patterning. Because these regulatory networks are fundamental to vertebrate development, Zebrafish Yb-1 antibody reagents support research in gene expression control, nucleic acid regulation, and developmental biology.

Yb-1 binds promoter elements known as Y-box motifs to modulate transcription of genes involved in growth, metabolism, and stress adaptation. Its transcriptional regulatory roles affect pathways that guide early embryogenesis, particularly in tissues undergoing rapid proliferation. In zebrafish embryos, ybx1 is strongly expressed during cleavage and gastrulation stages, reflecting its involvement in establishing maternal-to-zygotic transition programs. As development progresses, Yb-1 remains highly active in neural structures, somites, endodermal organs, and hematopoietic regions, where dynamic gene regulation supports tissue formation and organogenesis.

Beyond transcriptional control, Yb-1 plays major roles in post-transcriptional gene regulation. It binds mRNA untranslated regions and modulates transcript stability, translational efficiency, and localization. This allows Yb-1 to coordinate gene expression during periods of rapid cellular change. In zebrafish, these functions are important during muscle differentiation, neural specification, and formation of germ layers. Yb-1 has also been implicated in guiding mRNA storage and mobilization in oocytes and early embryos, contributing to maternal RNA utilization before zygotic genome activation.

Yb-1 participates in DNA repair pathways as well, interacting with repair proteins and contributing to genome maintenance. During vertebrate development, high rates of proliferation increase susceptibility to DNA replication stress, making Yb-1 essential for maintaining genomic integrity. Zebrafish studies have shown that disruptions to ybx1 affect cell cycle progression, lead to increased DNA damage, or reduce survival during early embryogenesis.

At the molecular level, Y-box-binding protein 1 contains a conserved cold shock domain that binds nucleic acids and facilitates a wide range of regulatory interactions. Its flexible C-terminal regions mediate protein-protein contacts with transcription factors, splicing components, translational regulators, and signaling molecules. Localization of Yb-1 varies depending on developmental stage or cellular conditions: it is predominantly cytoplasmic during early cleavage, transitions to the nucleus during zygotic genome activation, and shuttles between compartments in response to environmental or metabolic cues.

Stress response regulation is another hallmark of Yb-1 function. It is induced by heat shock, oxidative stress, DNA damage, and nutrient deprivation, where it modulates protective transcriptional programs and stabilizes stress-responsive mRNAs. In zebrafish, these roles are important for maintaining viability during fluctuating developmental or environmental conditions.

A Zebrafish Yb-1 antibody is suitable for research applications such as western blotting, immunohistochemistry, and assays examining transcriptional regulation, mRNA control, stress responses, and developmental gene expression. This antibody targets Ybx1 for studies involving nucleic acid-binding proteins, regulatory networks, and vertebrate embryonic physiology. NSJ Bioreagents provides the Zebrafish Yb-1 antibody to support research in gene regulation and developmental biology.

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

Application Notes

Optimal dilution of the Zebrafish Yb-1 antibody should be determined by the researcher.

Immunogen

An E.coli-derived zebrafish Yb-1 recombinant protein (amino acids R275-D310) was used as the immunogen for the Zebrafish Yb-1 antibody.

Storage

After reconstitution, the Zebrafish Yb-1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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