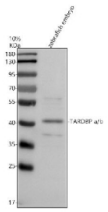
Zebrafish Tardbp Antibody / Tar DNA binding protein / Isoforms a & b (RZ1092)

Catalog No.	Formulation	Size
RZ1092	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	A0A8M9PSZ1, Q802C7
Applications	Western Blot : 0.5-1 ug/ml
Limitations	This Zebrafish Tardbp antibody is available for research use only.



Western blot analysis of Tardbpa/b protein using Zebrafish Tardbp antibody and zebrafish embryo tissue lysate. The predicted molecular weight of Tardbpa/b is ~45 kDa.

Description

Zebrafish (Danio rerio) Tardbp antibody detects TAR DNA binding protein, a highly conserved RNA and DNA binding protein central to RNA metabolism, mRNA stability, and transcriptional regulation. In zebrafish, tardbp encodes isoforms a and b, both structurally similar to mammalian TDP-43, which contains two RNA recognition motifs and a glycine rich C terminal region that mediates protein protein interactions. TDP-43 is broadly essential for embryogenesis, influencing pathways that shape neuronal development, muscle differentiation, and general cellular homeostasis. Because of its central roles in RNA processing, TAR DNA binding protein antibody reagents are widely used in developmental and

neurobiological research.

TAR DNA binding protein participates in multiple layers of RNA regulation, including splicing control, microRNA processing, transcriptional repression, and mRNA transport. It binds UG rich sequences across numerous transcripts and contributes to fine tuning gene expression during rapid developmental transitions. In zebrafish embryos, tardbp expression is detected in neural tissues, somites, cardiac progenitors, and regions with high transcriptional demand, consistent with its regulatory breadth. Loss of tardbp function produces severe defects in neuronal differentiation, muscle formation, and overall tissue organization, reflecting its essential developmental role.

In addition to its RNA related functions, TDP-43 contributes to stress responses and cytoskeletal organization. It shuttles between the nucleus and cytoplasm, participating in ribonucleoprotein granule formation and stress granule dynamics. Zebrafish models have been instrumental in exploring how altered TDP-43 localization affects neuronal integrity, axonal growth, and synaptic maintenance. Known interaction partners include hnRNP proteins, splicing factors, cytoskeletal associated molecules, and components of RNA transport complexes. These associations support TDP-43's involvement in long range RNA trafficking and post transcriptional gene regulation within developing tissues.

Isoforms a and b of zebrafish TDP-43 share conserved functional domains but may exhibit differences in expression timing or tissue specificity. Both forms contribute to the regulation of transcript networks involved in neuronal maturation, muscle fiber organization, and metabolic stability. Because TDP-43 supports numerous pathways simultaneously, disruptions in either isoform can produce wide ranging phenotypes, making zebrafish a useful platform for studying the protein's system level regulatory effects.

While TDP-43 is most widely recognized for its involvement in neurodegeneration in mammals, its core biological functions are fundamental to vertebrate development. Zebrafish studies have highlighted roles in motor neuron patterning, axon guidance, and neuromuscular connectivity. Expression in additional tissues such as the heart, gut, and notochord suggests broader contributions to cell fate determination and structural organization. These developmental insights help contextualize the protein's essential housekeeping functions.

The Zebrafish Tardbp antibody is suitable for research applications including western blotting, immunohistochemistry, and related assays aimed at profiling TDP-43 expression during early developmental stages. This reagent detects endogenous Tardbp isoforms without implying epitope mapping or literature validated specificity. NSJ Bioreagents provides the Zebrafish Tardbp antibody to support research in RNA processing, neural development, cytoskeletal biology, and vertebrate embryogenesis.

Application Notes

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

Immunogen

An E.coli-derived zebrafish Tardbp recombinant protein (amino acids T2-H265) was used as the immunogen for the Zebrafish Tardbp antibody. This antibody will detect the a and b isoforms.

Storage

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