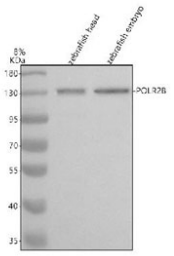
Zebrafish Polr2b Antibody / DNA-directed RNA polymerase subunit beta (RZ1273)

Catalog No.	Formulation	Size
RZ1273	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	A0A8M1N6S0
Applications	Western Blot : 0.5-1ug/ml
Limitations	This Zebrafish Polr2b antibody is available for research use only.



Zebrafish Polr2b Antibody Head and Embryo Tissue WB. Western blot analysis of Polr2b protein using Zebrafish Polr2b antibody and 1) zebrafish head tissue lysates and 2) zebrafish embryo tissue lysates. Predicted molecular weight ~134 kDa.

Description

The Zebrafish Polr2b antibody targets Polr2b, the DNA-directed RNA polymerase subunit beta, a core enzymatic component of RNA polymerase II essential for transcription of protein-coding genes, regulatory RNAs, and numerous developmental transcriptional programs in Danio rerio. Zebrafish, also known as Danio rerio, express polr2b ubiquitously during early embryogenesis, reflecting its indispensable role in zygotic genome activation, lineage specification, and continuous mRNA synthesis required for tissue growth and organ formation. Polr2b localizes to the nucleus as part of the multi-subunit RNA polymerase II complex, where it participates directly in DNA binding, RNA chain initiation, and

elongation during transcription.

Polr2b belongs to the conserved RNA polymerase II subunit family and contributes crucial structural and catalytic elements that stabilize the transcription bubble, coordinate nucleotide addition, and support interactions with transcription factors. In zebrafish embryos, high polr2b expression is detected in proliferative and transcriptionally active tissues such as developing brain regions, somites, endodermal organs, retina, and hematopoietic precursors. A Zebrafish Polr2b antibody is suitable for detecting strong nuclear expression in these domains, serving as a marker for active RNA synthesis and transcriptional output during development.

Functionally, Polr2b is essential for RNA polymerase II activity. It helps form the clamp and active-center regions that control DNA entry, RNA extension, and catalytic precision. This enables Polr2b to regulate mRNA synthesis, early gene activation, and transcriptional responses to developmental cues. In zebrafish, Polr2b contributes to germ layer formation, patterning of neural and mesodermal tissues, and organ-specific transcription during heart, gut, and brain development. Because transcription underlies major signaling pathways, including Wnt, Notch, Fgf, and Hedgehog, Polr2b indirectly shapes numerous developmental trajectories. Loss of polr2b function disrupts mRNA production, leading to severe developmental arrest and failure of tissue differentiation.

Structurally, zebrafish Polr2b contains conserved polymerase domains responsible for forming the catalytic center, interacting with DNA and RNA substrates, and stabilizing the multi-subunit Pol II complex. These regions coordinate with the C-terminal domain of Polr2a and other Pol II components to regulate transcription initiation, elongation, and RNA processing. The zebrafish polr2b gene maps to chromosome 17 and is regulated by maternal factors, proliferative stimuli, and developmental transcription networks. Co-localization studies detect Polr2b within nuclei of actively transcribing cells, frequently overlapping with markers of phosphorylated RNA polymerase II, transcription factor clusters, and RNA-processing machinery.

A Zebrafish Polr2b antibody is suitable for detecting Polr2b in studies focused on transcriptional regulation, zygotic genome activation, RNA synthesis, chromatin-associated processes, and developmental gene expression in Danio rerio. Its nuclear localization allows precise mapping of transcriptionally active zones, enabling researchers to evaluate transcriptional defects in genetic mutants, study toxicological disruption of RNA synthesis, and characterize gene expression landscapes during organogenesis. Because RNA polymerase II function is fundamental to vertebrate development, Polr2b is widely used as a marker of transcriptional competency and nuclear activity. This antibody is supplied for research use by NSJ Bioreagents.

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

Application Notes

Optimal dilution of the Zebrafish Polr2b antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Polr2b recombinant protein (amino acids E49-Q1145) was used as the immunogen for the Zebrafish Polr2b antibody.

Storage

After reconstitution, the Zebrafish Polr2b antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.