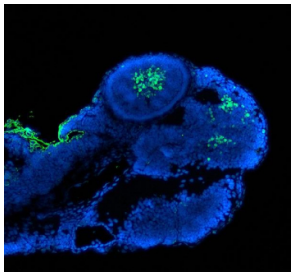
Zebrafish Pax6 Antibody / Pax6a / Pax6b (RZ1200)

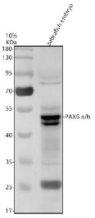
Catalog No.	Formulation	Size
RZ1200	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

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	P26630
Localization	Nuclear
Applications	Western Blot : 0.5-1ug/ml Immunofluorescence : 5ug/ml
Limitations	This Zebrafish Pax6 antibody is available for research use only.



Zebrafish Pax6 Antibody Embryo Tissue IF. Immunofluorescence analysis of zebrafish embryo tissue. Immunofluorescent staining of FFPE zebrafish embryo using Zebrafish Pax6 antibody (green) shows nuclear localization of Pax6-positive cells within developing embryonic structures, consistent with the role of Paired Box Protein Pax-6 in early vertebrate eye and neural development. Nuclei are counterstained with DAPI (blue). HIER: steam sections in pH8 EDTA buffer for 20 minutes prior to staining.



Zebrafish Pax6 Antibody Tissue WB. Western blot analysis of zebrafish embryo lysate with Zebrafish Pax6 antibody. Lane 1: zebrafish embryo lysate. A band is detected at approximately 48 kDa, consistent with the predicted molecular weight of Paired Box Protein Pax-6 (Pax6). The detected band corresponds to Pax6 a/b isoforms expressed during zebrafish embryonic development.

Description

The Zebrafish Pax6 antibody targets Pax6, a paired box transcription factor essential for early neural, ocular, and pancreatic development in Danio rerio. Zebrafish, also known as Danio rerio, possess two co-orthologs, Pax6a and Pax6b, created through the teleost genome duplication event. Both proteins localize to the nucleus and contain the conserved paired domain, homeobox DNA binding domain, and C-terminal transcriptional activation region characteristic of the Pax gene family. During early embryogenesis, Pax6 expression is prominent across the neural plate, developing eye field, forebrain, and endocrine pancreas, highlighting its role as a master regulator of pattern formation and cell fate specification.

Pax6a and Pax6b share overlapping developmental functions but also display distinct expression patterns and regulatory contributions. Pax6a is enriched within retinal progenitors and participates heavily in optic vesicle morphogenesis, while Pax6b plays a particularly important role in lens epithelium formation and endocrine pancreas lineage specification. Both proteins influence retinal lamination, neuronal progenitor maintenance, and boundary formation within the developing forebrain. A Zebrafish Pax6 antibody is suitable for research applications examining nuclear transcription factor expression across these early developmental domains.

Pax6 functions within multiple gene regulatory networks and developmental pathways, including Wnt-related neuroepithelial patterning, Hedgehog-dependent eye field specification, and transcriptional interactions with factors such as Sox2, Otx2, and Prox1. These partnerships help direct progenitor expansion, regional identity, and the differentiation trajectories of retinal ganglion cells, amacrine cells, and other neuronal subtypes. Pax6 expression is tightly regulated over time, appearing early in the optic vesicle and neural tube before becoming refined into distinct retinal layers as development progresses. Isoform-specific regulation also emerges, with Pax6b showing developmental timing unique to pancreatic endocrine maturation.

Structurally, Pax6a and Pax6b maintain the core functional domains necessary for DNA binding and transcriptional activation, enabling them to coordinate chromatin accessibility and gene expression programs. In zebrafish, pax6a maps to chromosome 7, whereas pax6b is located on chromosome 25, reflecting their duplication-derived divergence. Within cells, Pax6 frequently co-localizes with nuclear proteins involved in chromatin remodeling and neural lineage commitment, reinforcing its role as a regulatory hub for neurodevelopment.

A Zebrafish Pax6 antibody is suitable for studies examining neural patterning, retinal development, endocrine pancreas formation, and transcriptional regulation across embryonic and larval Danio rerio stages. Its nuclear staining pattern provides clear visualization of progenitor domains, lineage specification zones, and the functional differences between Pax6a and Pax6b. This reagent supports research efforts aimed at understanding transcription factor biology, early organogenesis, and the genetic programs directing vertebrate eye and brain development, and is provided 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 Pax6 antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Pax6 recombinant protein (amino acids M1-M401) was used as the immunogen for the Zebrafish Pax6 antibody. This antibody will detect isoforms a & b.

Storage

After reconstitution, the Zebrafish Pax6 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.