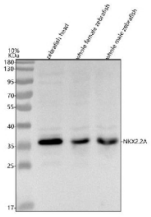
Zebrafish Nkx2.2a Antibody / Nkx2.2 (RZ1250)

Catalog No.	Formulation	Size
RZ1250	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	Q90481
Applications	Western Blot : 0.5-1ug/ml
Limitations	This Zebrafish Nkx2.2a antibody is available for research use only.



Zebrafish Nkx2.2a Antibody Tissue WB. Western blot analysis of Nkx2.2a protein using Zebrafish Nkx2.2a antibody and 1) zebrafish head, 2) whole female zebrafish and 3) whole male zebrafish tissue lysate. Predicted molecular weight ~30 kDa, commonly observed at 36-40 kDa.

Description

The Zebrafish Nkx2.2a antibody targets Nkx2.2a (also referred to as Nkx2.2), a homeobox transcription factor essential for neural patterning, ventral spinal cord specification, endocrine pancreas development, and early cell fate determination in Danio rerio. Zebrafish, also known as Danio rerio, express nkx2.2a in ventral neural progenitors exposed to Sonic Hedgehog signaling, where this factor defines progenitor domains that give rise to specific interneuron and glial lineages. Nkx2.2a localizes to the nucleus, regulating transcriptional programs that determine ventral neural identity, oligodendrocyte precursor formation, and regional patterning along the neural tube.

Nkx2.2a belongs to the NK2 family of homeodomain transcription factors characterized by a conserved 60-amino-acid homeodomain that mediates DNA binding and transcriptional regulation. In zebrafish embryos, nkx2.2a expression appears prominently in the ventral spinal cord, hindbrain, and hypothalamic territories, as well as in endodermal regions that contribute to the pancreas. A Zebrafish Nkx2.2a antibody is suitable for research applications examining nuclear expression patterns in neural progenitors, ventral domain specification, and tissues undergoing Hedgehog-dependent patterning throughout early development.

Functionally, Nkx2.2a acts downstream of Sonic Hedgehog to refine boundary formation within the ventral neural tube. It promotes differentiation of V3 interneurons, influences oligodendrocyte precursor development, and represses alternate dorsal and intermediate cell fates. In endocrine pancreas development, Nkx2.2a contributes to early endocrine precursor specification and regulates transcriptional networks essential for hormone-producing cell differentiation. Loss of nkx2.2a disrupts ventral neuronal subtype formation, alters glial lineage allocation, and impairs endocrine islet development, highlighting its broad developmental significance. Zebrafish models use nkx2.2a expression to study neural patterning, glial development, and endodermal endocrine organ formation.

Structurally, zebrafish Nkx2.2a contains a classical homeodomain required for DNA binding, along with regulatory regions that interact with transcriptional co-factors. These domains enable Nkx2.2a to activate neural-lineage gene programs while repressing alternate identities, creating sharply defined patterning boundaries across the neural tube. Zebrafish nkx2.2a maps to chromosome 21, with regulatory elements responsive to Hedgehog signaling gradients and ventral organizer cues. Co-localization studies frequently detect Nkx2.2a overlapping with markers such as olig2, nkx6.1, and shh pathway components, reflecting its placement within the ventral neural specification hierarchy.

A Zebrafish Nkx2.2a antibody is suitable for detecting Nkx2.2a in studies focused on neural tube patterning, interneuron specification, glial lineage formation, endocrine pancreas development, and Hedgehog signaling in Danio rerio. Its nuclear localization provides precise mapping of progenitor domains, enabling researchers to analyze neural subtype distribution, evaluate patterning defects in mutants, and assess alterations in neural or endocrine development under genetic or environmental perturbations. Nkx2.2a is widely used as a marker for ventral neural identity and early endocrine differentiation in zebrafish developmental studies. 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 Nkx2.2a antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Nkx2.2a recombinant protein (amino acids M1-W269) was used as the immunogen for the Zebrafish Nkx2.2a antibody.

Storage

After reconstitution, the Zebrafish Nkx2.2a antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.