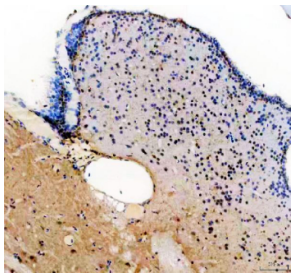
Zebrafish Her4 Antibody / Her4.1 / Her4.2 / Her4.3 / Her4.5 (RZ1188)

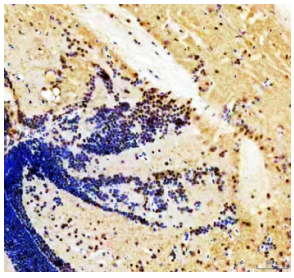
Catalog No.	Formulation	Size
RZ1188	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Availability	2-3 weeks
Species Reactivity	Zebrafish
Format	Antigen affinity purified
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity chromatography
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q90466
Localization	Nuclear
Applications	Immunohistochemistry (FFPE) : 2-5ug/ml
Limitations	This Zebrafish Her4 antibody is available for research use only.



IHC staining of zebrafish Her4 protein using Zebrafish Her4 antibody, HRP-labeled secondary and DAB substrate. Her4 was detected in a paraffin-embedded section of zebrafish brain tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



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Description

Zebrafish (Danio rerio) Her4 antibody detects Her4, a member of the Hairy-related (Her/Hes) family of basic helix-loop-helix transcriptional repressors that mediate Notch signaling during vertebrate development. In zebrafish, the her4 locus includes several closely related paralogs, including Her4.1, Her4.2, Her4.3, and Her4.5, all of which function as downstream Notch effectors that regulate neurogenesis and cell fate specification. Because Notch signaling controls the balance between progenitor maintenance and neuronal differentiation, Zebrafish Her4 antibody reagents support research in neural patterning, stem cell regulation, and developmental signaling.

The Her family proteins act primarily as transcriptional repressors that inhibit proneural gene expression. In the developing zebrafish nervous system, Her4 paralogs help maintain neural progenitor pools by repressing genes such as neurogenin and ascl1, preventing premature differentiation. Notch activation triggers Her gene expression in specific progenitor domains, creating a dynamic pattern of lateral inhibition that ensures proper spacing and timing of neuronal birth. Loss or reduction of Her4 function disrupts this balance, leading to excess neuronal differentiation and depletion of progenitor populations.

During early embryogenesis, her4 paralogs are strongly expressed in the developing hindbrain, spinal cord, and forebrain, as well as in neurogenic regions such as the optic vesicle and cranial sensory placodes. These domains reflect the conserved requirement for Notch-Her signaling in shaping the vertebrate nervous system. Zebrafish models have shown that Her4 paralogs act sequentially or redundantly depending on tissue context, with some isoforms contributing to boundary formation, segmental patterning, and maintenance of stem-like neural progenitors.

Beyond the nervous system, Her4.1, Her4.2, Her4.3, and Her4.5 influence other developmental processes that rely on Notch-mediated transcriptional repression. These include aspects of somitogenesis, endocrine lineage specification, and epithelial tissue differentiation. Although neural roles dominate, Her4 paralogs remain relevant in multiple tissues where Notch activity governs cell cycle dynamics and differentiation outcomes.

At the molecular level, Her4 proteins contain a basic helix-loop-helix domain required for DNA binding and dimerization, along with an orange domain that modulates transcriptional repression. Her4 proteins recruit co-repressors such as Groucho/TLE family members, enabling tight suppression of target gene expression at promoters and enhancers. Subcellular localization is nuclear, consistent with their transcriptional regulatory activity.

Her4 functions as part of a broader regulatory network that integrates Notch signals with other pathways including Wnt, FGF, and Hedgehog. These interactions coordinate cell fate decisions during rapid tissue expansion. In zebrafish, where neurogenesis proceeds in highly stereotyped waves, Her4 paralogs ensure that progenitor pools are preserved long enough to produce appropriate numbers and types of neurons.

A Zebrafish Her4 antibody is suitable for research applications such as western blotting, immunohistochemistry, and assays examining Notch signaling, neural progenitor regulation, proneural gene repression, and developmental patterning. This antibody targets Her4 including isoforms Her4.1, Her4.2, Her4.3, and Her4.5 for studies involving neurogenesis and vertebrate nervous system development. NSJ Bioreagents provides the Zebrafish Her4 antibody to support research in transcriptional regulation and developmental signaling.

Application Notes

Optimal dilution of the Zebrafish Her4 antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Her4 recombinant protein (amino acids M1-W152) was used as the immunogen for the Zebrafish Her4 antibody. This antibody will detect isoforms 1 & 2 & 3 & 5.

Storage

After reconstitution, the Zebrafish Her4 antibody can be stored for up to one month at 4oC. For long-term, aliquot and

store at -20oC. Avoid repeated freezing and thawing.