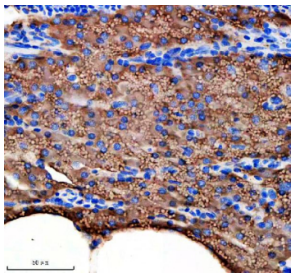
Zebrafish Idh3b Antibody / Isocitrate dehydrogenase subunit beta (RZ1016)

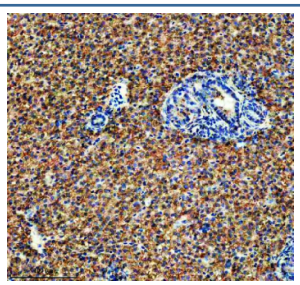
Catalog No.	Formulation	Size
RZ1016	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

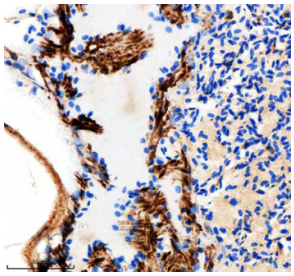
Availability	2-3 weeks
Species Reactivity	Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity chromatography
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	A0A2R8QPC9
Localization	Cytoplasm (Mitochondria)
Applications	Immunohistochemistry (FFPE): 2-5 ug/ml
Limitations	This Zebrafish Idh3b antibody is available for research use only.



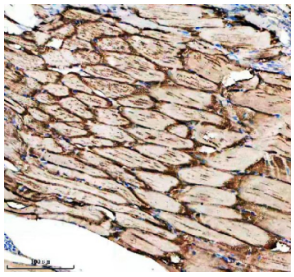
Zebrafish Idh3b Antibody Pancreas IHC. Immunohistochemical analysis of Idh3b protein using Zebrafish Idh3b antibody and paraffin-embedded zebrafish pancreas tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



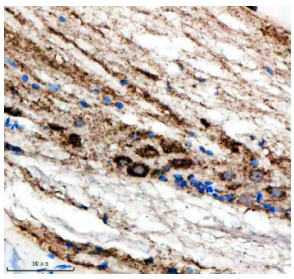
Zebrafish Idh3b Antibody Liver IHC. Immunohistochemical analysis of Idh3b protein using Zebrafish Idh3b antibody and paraffin-embedded zebrafish liver tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



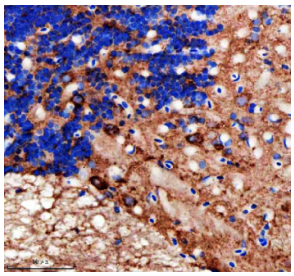
Zebrafish Idh3b Antibody Heart IHC. Immunohistochemical analysis of Idh3b protein using Zebrafish Idh3b antibody and paraffin-embedded zebrafish heart tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



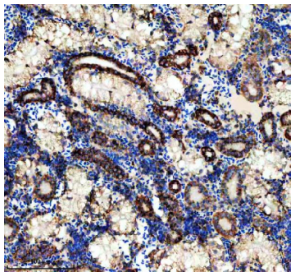
Zebrafish Idh3b Antibody Muscle IHC. Immunohistochemical analysis of Idh3b protein using Zebrafish Idh3b antibody and paraffin-embedded zebrafish muscle tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Idh3b Antibody Spinal Cord IHC. Immunohistochemical analysis of Idh3b protein using Zebrafish Idh3b antibody and paraffin-embedded zebrafish spinal cord tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Idh3b Antibody Cerebellum IHC. Immunohistochemical analysis of Idh3b protein using Zebrafish Idh3b antibody and paraffin-embedded zebrafish cerebellum tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Idh3b Antibody Kidney IHC. Immunohistochemical analysis of Idh3b protein using Zebrafish Idh3b antibody and paraffin-embedded zebrafish kidney tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.

Description

Zebrafish (Danio rerio) Idh3b antibody recognizes Isocitrate dehydrogenase subunit beta, a mitochondrial enzyme encoded by the zebrafish idh3b gene on chromosome 5. Idh3b forms one of the catalytic subunits of the NAD-dependent isocitrate dehydrogenase 3 complex, which functions within the tricarboxylic acid (TCA) cycle to convert isocitrate into alpha-ketoglutarate while generating NADH. This reaction contributes directly to mitochondrial energy production, redox balance, and biosynthetic signaling pathways. In Danio rerio, Idh3b is expressed throughout embryogenesis and is highly enriched in tissues with strong mitochondrial activity such as brain, somites, heart, developing musculature, and early endoderm-derived organs. Idh3b localizes to the mitochondrial matrix where it interacts with Idh3a and Idh3g subunits to

form the functional heterotetrameric enzyme complex.

Isocitrate dehydrogenase subunit beta plays an essential role in regulating metabolic flux through the TCA cycle during rapid developmental growth. By contributing to mitochondrial NADH production, Idh3b supports oxidative phosphorylation, ATP synthesis, and cellular redox homeostasis. Zebrafish embryos rely heavily on mitochondrial metabolism as they transition from maternally supplied energy reserves to autonomous metabolic regulation. Idh3b activity influences metabolic pathways connected to amino acid biosynthesis, carbon flow into the electron transport chain, and the generation of metabolites required for epigenetic regulation during tissue differentiation. Because mitochondrial metabolism is intimately tied to developmental signaling, Idh3b supports processes that guide proliferation, patterning, and organogenesis.

Developmental studies indicate that disruption of Idh3b or other TCA cycle components can lead to abnormalities in muscle development, neural differentiation, cardiac morphogenesis, and craniofacial patterning. Proper Idh3b activity is required for maintaining mitochondrial membrane potential and supporting the energetic demands of migrating cells during morphogenetic movements. In the developing nervous system, Idh3b contributes to metabolic environments that support axon growth, neuronal maturation, and synaptic assembly. In muscle and cardiac tissue, its function is required for contractile apparatus organization and metabolic stability during early beating activity.

Idh3b also participates in stress response pathways that adjust mitochondrial metabolism during hypoxia, nutrient limitation, or oxidative stress. Zebrafish studies have shown that metabolic plasticity is essential for embryonic survival under fluctuating environmental conditions, and Idh3b contributes to adaptive shifts in mitochondrial function. Isoform variation or differential expression may influence tissue-specific metabolic states, allowing Idh3b to meet varying energetic demands across developing organs. Because alpha-ketoglutarate generated by Idh3b modulates chromatin regulation and gene expression, this enzyme also indirectly influences epigenetic processes that guide lineage specification.

This Zebrafish Idh3b antibody is suitable for detecting Isocitrate dehydrogenase subunit beta in research focused on mitochondrial metabolism, TCA cycle regulation, developmental energy homeostasis, neural and muscular differentiation, and metabolic stress responses in zebrafish. It supports studies examining oxidative phosphorylation, redox control, metabolite-driven signaling, and developmental phenotypes arising from altered mitochondrial activity. NSJ Bioreagents provides this reagent within its zebrafish and metabolic biology antibody collection.

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

Application Notes

Optimal dilution of the Zebrafish Idh3b antibody should be determined by the researcher.

Immunogen

An E.coli-derived zebrafish Idh3b recombinant protein (amino acids T33-D363) was used as the immunogen for the Zebrafish Idh3b antibody.

Storage

After reconstitution, the Zebrafish Idh3b antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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