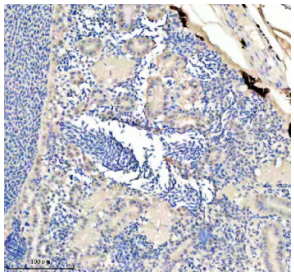
Zebrafish Eno1 Antibody / Eno1a / Eno1b (RZ1132)

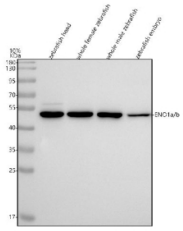
Catalog No.	Formulation	Size
RZ1132	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

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	Q6PC89, A0A2R8Q1X2
Localization	Cytoplasm
Applications	Western Blot : 0.5-1 ug/ml Immunohistochemistry (FFPE) : 2-5 ug/ml
Limitations	This Zebrafish Eno1 antibody is available for research use only.



IHC staining of FFPE zebrafish kidney tissue with Zebrafish Eno1 antibody, HRP secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Western blot analysis of ENO1a/b protein using Zebrafish Eno1 antibody and 1) zebrafish head, 2) whole female zebrafish, 3) whole male zebrafish and 4) zebrafish embryo tissue lysate. Predicted molecular weight ~47 kDa.

Description

Zebrafish (Danio rerio) Eno1 antibody detects Eno1, a conserved glycolytic enzyme that catalyzes the conversion of 2-phosphoglycerate to phosphoenolpyruvate during energy metabolism. In zebrafish, the eno1 locus is represented by two paralogs, eno1a and eno1b, which encode closely related forms of the enzyme alpha-enolase. These enzymes are essential for ATP generation through glycolysis, particularly in tissues that rely heavily on anaerobic or high-throughput metabolic pathways during rapid embryonic growth. Because glycolytic regulation influences cell proliferation, migration, and survival, Zebrafish Eno1 antibody reagents support a broad range of developmental and metabolic research applications.

Eno1 is widely expressed across developing zebrafish tissues, including the neural plate, musculature, heart, somites, and rapidly dividing epithelial regions. These expression domains reflect the metabolic intensity of early embryogenesis, where cells must produce energy quickly to support morphogenetic movements and differentiation. Both Eno1a and Eno1b contribute to these metabolic demands, with overlapping roles in glycolytic flux and cytoskeletal organization. Their high conservation with vertebrate ENO1 underscores their importance in maintaining cellular energy homeostasis during development.

Beyond its canonical metabolic function, Eno1 also participates in additional cellular processes. In vertebrate systems, ENO1 is known to influence plasminogen binding at the cell surface, modulate cytoskeletal remodeling, and contribute to responses to hypoxia and oxidative stress. These non-glycolytic functions, collectively referred to as moonlighting activities, may also be present in zebrafish Eno1a and Eno1b and are relevant for understanding how metabolic enzymes contribute to broader physiological pathways.

Eno1 is further implicated in cell proliferation and survival. Its metabolic activity supports biosynthetic reactions required for nucleotide, amino acid, and lipid production. In developing zebrafish tissues, enhanced glycolysis supports rapid cell division in the brain, somites, and hematopoietic populations. Disruption of eno1 function in vertebrates leads to metabolic imbalance, impaired muscle development, and compromised neural differentiation, illustrating its essential role in growth and maturation.

At the molecular level, Eno1 forms a dimeric enzyme that interacts with cytoskeletal elements, membrane-associated proteins, and metabolic regulators. Its dynamic localization reflects its dual roles in glycolysis and structural organization. In zebrafish embryos, Eno1 localizes primarily to the cytoplasm, though surface-associated pools may contribute to extracellular matrix remodeling or plasmin generation, similar to mammalian systems.

Zebrafish models provide unique opportunities to visualize metabolic activity in vivo, and Eno1-based assays often accompany studies of energy demand, tissue specification, and developmental stress responses. Because Eno1a and Eno1b share strong structural homology, many research applications examine their combined contributions to glycolytic capacity and developmental physiology.

A Zebrafish Eno1 antibody is suitable for research applications such as western blotting, immunohistochemistry, and assays examining glycolytic regulation, metabolic adaptation, and tissue maturation. This antibody targets Eno1 for studies investigating energy metabolism, developmental biology, and vertebrate cell physiology. NSJ Bioreagents provides the Zebrafish Eno1 antibody to support research into metabolic pathways and embryonic growth.

Application Notes

Optimal dilution of the Zebrafish Eno1 antibody should be determined by the researcher.

Immunogen

A synthetic peptide corresponding to a sequence in the middle region of zebrafish ENO1a/b was used as the immunogen for the Zebrafish Eno1 antibody. This antibody will detect the a and b isoforms.

Storage

After reconstitution, the Zebrafish Eno1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.