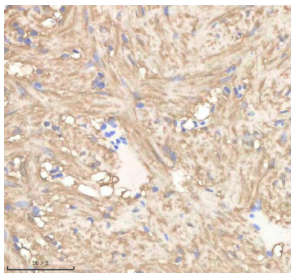
Zebrafish Pgam1 Antibody / Pgam1a / Pgam1b / Phosphoglycerate mutase (RZ1268)

Catalog No.	Formulation	Size
RZ1268	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	Q7SZR4, B8A4H6
Applications	Immunohistochemistry (FFPE) : 2-5ug/ml
Limitations	This Zebrafish Pgam1 antibody is available for research use only.



Zebrafish Pgam1 Antibody Heart Tissue IHC. Immunohistochemistry staining of zebrafish Pgam1a/b protein using Zebrafish Pgam1 antibody, HRP-labeled secondary and DAB substrate. Pgam1 was detected in a paraffin-embedded section of zebrafish heart tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.

Description

The Zebrafish Pgam1 antibody targets Pgam1, including the duplicated paralogs Pgam1a and Pgam1b, a cytosolic glycolytic enzyme essential for energy metabolism, intracellular pH balance, and metabolic adaptation during development in Danio rerio. Zebrafish, also known as Danio rerio, express pgam1 broadly in metabolically active tissues, including skeletal muscle, brain, heart, notochord, and developing organ primordia. Pgam1 localizes to the cytoplasm, where it catalyzes the reversible conversion of 3-phosphoglycerate to 2-phosphoglycerate, a key step in the glycolytic pathway that supports ATP production during rapid embryonic growth.

Pgam1 belongs to the phosphoglycerate mutase family, characterized by a conserved catalytic histidine residue and a cofactor-dependent reaction mechanism that drives efficient glycolytic flux. In zebrafish embryos, pgam1a and pgam1b expression increases during periods of high energy demand, supporting muscle differentiation, neural activity, and organogenesis. A Zebrafish Pgam1 antibody is suitable for detecting cytoplasmic expression across tissues where glycolytic metabolism fuels proliferation, differentiation, and morphogenetic movements.

Functionally, Pgam1 is indispensable for maintaining metabolic homeostasis. Its activity supports ATP generation, regulates glycolytic throughput, and influences biosynthetic pathways connected to serine and glycine metabolism. In zebrafish, Pgam1 contributes to muscle fiber maturation, neural metabolic support, cardiac energy balance, and overall embryo viability. Perturbations in pgam1 expression or enzymatic function can impair energy production, disrupt tissue patterning, and sensitize cells to metabolic stress. Because glycolysis is a major energy source during early development, Pgam1 expression serves as a robust indicator of metabolic demand and tissue-specific energy utilization.

Structurally, zebrafish Pgam1 contains conserved catalytic motifs, including the histidine-rich active site necessary for phosphate group transfer. The paralogs Pgam1a and Pgam1b map to chromosome 3 and chromosome 20, respectively, and show overlapping but distinct expression patterns shaped by tissue-specific metabolic regulation. Co-localization studies frequently detect Pgam1 in skeletal muscle fibers, central nervous system structures, cardiac tissue, and other regions with elevated glycolytic activity. Its distribution often overlaps with markers of energy metabolism such as enolase, aldolase, and lactate dehydrogenase.

A Zebrafish Pgam1 antibody is suitable for detecting Pgam1 in studies focused on glycolysis, metabolic adaptation, organ development, muscle biology, neural energetics, and stress-response pathways in Danio rerio. Its cytoplasmic localization allows researchers to examine energy-use patterns, evaluate metabolic defects in genetic models, and analyze how developmental or environmental conditions affect glycolytic flux. Pgam1 expression is also relevant in disease modeling, including studies of metabolic disorders, mitochondrial compensation, and energetic failure during embryogenesis. 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 Pgam1 antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Pgam1 recombinant protein (amino acids Q43-K254) was used as the immunogen for the Zebrafish Pgam1 antibody. This antibody will detect the a & b isoforms.

Storage

After reconstitution, the Zebrafish Pgam1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.