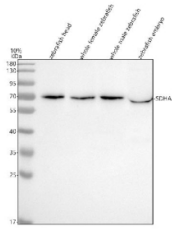
Zebrafish Sdha Antibody / Succinate dehydrogenase A (RZ1305)

Catalog No.	Formulation	Size
RZ1305	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	Q7ZVF3
Applications	Western Blot : 0.5-1ug/ml
Limitations	This Zebrafish Sdha antibody is available for research use only.



Western blot analysis of Sdha protein using Zebrafish Sdha antibody and 1) zebrafish head, 2) whole female zebrafish, 3) whole male zebrafish and 4) zebrafish embryo tissue lysate. Predicted molecular weight ~72 kDa.

Description

The Zebrafish Sdha antibody targets Sdha, also known as Succinate dehydrogenase A, a mitochondrial flavoprotein subunit of succinate dehydrogenase that functions at the intersection of the tricarboxylic acid (TCA) cycle and the electron transport chain in Danio rerio. Zebrafish, also known as Danio rerio, express sdha ubiquitously during embryogenesis, with particularly high expression in metabolically active tissues such as brain, heart, skeletal muscle, liver primordium, and developing somites. Sdha localizes to the inner mitochondrial membrane, where it faces the mitochondrial matrix and catalyzes the oxidation of succinate to fumarate while transferring electrons to the respiratory chain.

Sdha is a core component of mitochondrial complex II, which uniquely participates in both central carbon metabolism and oxidative phosphorylation. The protein contains a flavin adenine dinucleotide (FAD) binding domain that enables electron transfer during succinate oxidation. In zebrafish embryos, robust mitochondrial biogenesis and energy demand during rapid cell division and organ formation are accompanied by strong sdha expression. A Zebrafish Sdha antibody is suitable for detecting mitochondrial localization in tissues undergoing high oxidative metabolism and energetic demand.

Functionally, Sdha is essential for aerobic energy production. By linking the TCA cycle to the electron transport chain, Sdha supports ATP generation, redox balance, and metabolic flexibility. In zebrafish, proper Sdha function is critical for cardiac contractility, neural development, muscle differentiation, and overall growth. Disruption of mitochondrial metabolism can lead to impaired organogenesis, reduced motility, and developmental delay. Because complex II activity influences reactive oxygen species production and cellular redox state, Sdha also indirectly impacts signaling pathways sensitive to metabolic status and oxidative stress. As a result, sdha expression is frequently used as a marker of mitochondrial abundance and metabolic competence in developmental and disease models.

Structurally, zebrafish Sdha contains conserved domains responsible for FAD binding and interaction with other complex II subunits embedded in the inner mitochondrial membrane. These interactions stabilize the succinate dehydrogenase complex and enable efficient electron transfer to ubiquinone. The zebrafish sdha gene maps to chromosome 4 and is regulated by metabolic cues, mitochondrial biogenesis programs, and transcriptional networks associated with energy demand and tissue maturation. Co-localization studies detect Sdha within mitochondria across diverse cell types, often overlapping with other oxidative phosphorylation components and mitochondrial markers such as Cox and Atp synthase subunits.

A Zebrafish Sdha antibody is suitable for detecting Sdha in studies focused on mitochondrial function, energy metabolism, oxidative phosphorylation, and metabolic regulation during development in Danio rerio. Its mitochondrial localization allows researchers to assess metabolic state, analyze mitochondrial defects in genetic or chemical models, and study how energy production supports tissue differentiation and organ function. Because mitochondrial metabolism underlies nearly all developmental processes, Sdha serves as a widely used marker for mitochondrial integrity and oxidative capacity. This antibody is supplied for research use by NSJ Bioreagents.

Application Notes

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

Immunogen

E. coli-derived zebrafish Sdha recombinant protein (amino acids D132-R551) was used as the immunogen for the Zebrafish Sdha antibody.

Storage

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