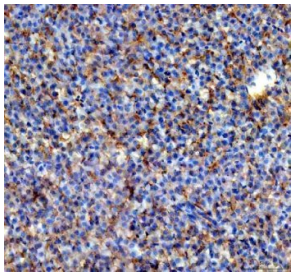
Zebrafish ALDH2 Antibody / ALDH2.1/2.2 Antibody (RZ1461)

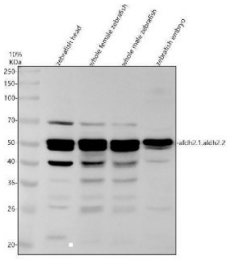
Catalog No.	Formulation	Size
RZ1461	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Species Reactivity	Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Buffer	Lyophilized from a buffered saline solution containing 2% trehalose. Reconstitute with 0.2 mL distilled water to yield a final antibody concentration of 500 ug/mL.
UniProt	Q7SXU3
Applications	Western Blot : 0.5-1ug/ml Immunohistochemistry (FFPE) : 2-5ug/ml
Limitations	This Zebrafish ALDH2 Antibody / ALDH2.1/2.2 Antibody is available for research use only.



Zebrafish ALDH2 Antibody / ALDH2.1/2.2 Liver IHC. Immunohistochemistry analysis of ALDH2.1,2.2 using anti-ALDH2.1,2.2 antibody. ALDH2.1,2.2 was detected in a paraffin-embedded section of zebrafish liver tissue. Heat mediated antigen retrieval was performed in EDTA buffer. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-ALDH2.1,2.2 Antibody overnight at 4oC. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37oC. The tissue section was developed using DAB as the chromogen.



Zebrafish ALDH2 Antibody / ALDH2.1/2.2 WB. Western blot analysis of ALDH2.1,2.2 using anti-ALDH2.1,2.2 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel for 2 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions. Lane 1: zebrafish head tissue lysates, Lane 2: whole female zebrafish tissue lysates, Lane 3: whole male zebrafish tissue lysates, Lane 4: zebrafish embryo tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-ALDH2.1,2.2 antigen antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an ECL Plus WB. Western blotting Substrate with Tanon 5200 system. A specific band was detected for ALDH2.1,2.2 at approximately 56 kDa. The expected band size for ALDH2.1,2.2 is at 56 kDa.

Description

Zebrafish ALDH2 Antibody / ALDH2.1/2.2 Antibody recognizes aldehyde dehydrogenase 2 enzymes encoded by the aldh2.1 and aldh2.2 genes, two zebrafish paralogs of the human ALDH2 ortholog. ALDH2 proteins are mitochondrial enzymes that catalyze the oxidation of toxic aldehydes into their corresponding carboxylic acids, thereby protecting cells from oxidative damage and metabolic stress. Best known for metabolizing acetaldehyde generated during alcohol metabolism, ALDH2 also detoxifies a wide range of endogenous and environmental aldehydes produced during lipid peroxidation and cellular stress. The highly conserved nature of ALDH2 function makes zebrafish an excellent model for studying aldehyde metabolism and mitochondrial homeostasis.

Zebrafish ALDH2 Antibody / ALDH2.1/2.2 Antibody is useful for investigating metabolic regulation and cellular defense mechanisms. Expression of ALDH2.1 and ALDH2.2 is observed in multiple tissues with high metabolic activity, where mitochondrial detoxification pathways are essential for maintaining cellular integrity. By removing reactive aldehydes, ALDH2 enzymes help preserve protein function, membrane stability, and mitochondrial activity. These protective functions are particularly important in tissues exposed to oxidative stress, including the heart, liver, nervous system, and developing embryo.

Accumulation of toxic aldehydes has been implicated in numerous pathological processes including cardiovascular disease, neurodegeneration, liver injury, and aging. In humans, reduced ALDH2 activity is associated with increased susceptibility to oxidative damage and altered responses to alcohol metabolism. Zebrafish models have contributed to understanding how aldehyde detoxification influences embryonic development, stress responses, and tissue maintenance. Because ALDH2 activity intersects with pathways regulating mitochondrial function and cellular survival, it remains an important focus of metabolic and toxicological research. Zebrafish ALDH2 Antibody / ALDH2.1/2.2 Antibody provides a valuable tool for examining these conserved biological processes.

Zebrafish ALDH2 Antibody / ALDH2.1/2.2 Antibody is valuable for studies of aldehyde metabolism, oxidative stress, mitochondrial biology, toxicology, and vertebrate development. It supports investigations of cellular detoxification pathways, metabolic homeostasis, and mechanisms that protect tissues from reactive aldehyde-induced damage. The conserved expression and function of ALDH2 enzymes make Zebrafish ALDH2 Antibody / ALDH2.1/2.2 Antibody an important reagent for developmental and translational research.

Explore our ALDH2 Antibody / Mitochondrial Detoxification Enzyme Antibody page for additional information on this key regulator of aldehyde metabolism, mitochondrial function, and oxidative stress protection.

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

Application Notes

The optimal working dilution of the Zebrafish ALDH2 Antibody / ALDH2.1/2.2 Antibody should be determined empirically by the investigator.

Immunogen

An E.coli-derived Zebrafish ALDH2.1/2.2 recombinant protein (amino acids M1-S516) was used as the immunogen for the Zebrafish ALDH2 Antibody / ALDH2.1/2.2.

Storage

After reconstitution, the Zebrafish ALDH2 Antibody / ALDH2.1/2.2 can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

Zebrafish ALDH2 antibody, Zebrafish ALDH2.1/2.2 antibody, Zebrafish Aldehyde Dehydrogenase 2 antibody, Zebrafish Mitochondrial ALDH antibody, Zebrafish Acetaldehyde Dehydrogenase antibody, Zebrafish Oxidative Detoxification Enzyme antibody