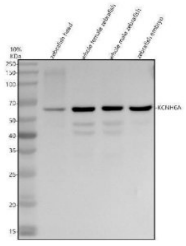
Zebrafish Catalase Antibody / CAT (RZ1475)

Catalog No.	Formulation	Size
RZ1475	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	Q9PT92
Applications	Western blot: 0.5-1ug/ml
Limitations	This Zebrafish Catalase Antibody is available for research use only.



Zebrafish Catalase Antibody Zebrafish Head, Female, Male and Embryo WB. Western blot analysis of 1) zebrafish head, 2) whole female zebrafish, 3) whole male zebrafish, and 4) zebrafish embryo tissue lysates using Zebrafish Catalase Antibody. A distinct immunoreactive band is detected at approximately 59 kDa in all four samples, consistent with the predicted molecular weight of catalase. The observed molecular weight matches the expected size of approximately 59 kDa, supporting specific detection of the endogenous antioxidant enzyme. Proteins were separated under reducing conditions, transferred to a nitrocellulose membrane, and detected following incubation with the primary antibody (0.5 ug/ml) and an HRP-conjugated goat anti-rabbit secondary antibody using ECL detection.

Description

Zebrafish Catalase Antibody recognizes catalase, a highly conserved antioxidant enzyme that protects cells from oxidative damage by catalyzing the conversion of hydrogen peroxide into water and oxygen. As one of the primary enzymatic defenses against reactive oxygen species, catalase maintains cellular redox homeostasis and prevents the accumulation of toxic peroxide levels generated during normal metabolism and environmental stress. Because oxidative stress influences numerous developmental and physiological processes, Zebrafish Catalase Antibody is a valuable tool for studies of antioxidant defense, redox biology, and vertebrate development.

Catalase is localized primarily within peroxisomes, where it detoxifies hydrogen peroxide produced during fatty acid beta oxidation and other oxidative metabolic pathways. In zebrafish, catalase contributes to protection of developing tissues against oxidative injury while supporting normal growth, organogenesis, and cellular survival. The enzyme is widely expressed in metabolically active tissues and functions together with superoxide dismutases, glutathione peroxidases, and additional antioxidant enzymes to preserve redox balance and limit oxidative damage to proteins, lipids, and nucleic acids.

Altered catalase activity has been associated with aging, inflammation, neurodegeneration, cardiovascular disease, metabolic disorders, liver injury, and cancer. Zebrafish has become an important vertebrate model for investigating oxidative stress because reactive oxygen species influence tissue regeneration, immune responses, embryonic development, and responses to environmental toxicants. The high conservation of catalase structure and function between zebrafish and mammals makes this model particularly useful for studying antioxidant mechanisms and evaluating therapeutic strategies targeting oxidative stress pathways.

Zebrafish Catalase Antibody is suitable for immunohistochemistry, immunofluorescence, western blotting, and additional immunodetection applications requiring reliable detection of catalase expression and localization. Researchers commonly use this antibody to investigate oxidative stress, peroxisome biology, antioxidant defense mechanisms, tissue injury, and redox signaling throughout zebrafish development and disease models. By supporting studies of one of the principal enzymes responsible for hydrogen peroxide detoxification, Zebrafish Catalase Antibody provides a dependable reagent for developmental biology, toxicology, and oxidative stress research.

Learn more about catalase biology, antioxidant defense, and additional validated products on our Catalase Antibody page.

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 Catalase Antibody should be determined empirically by the investigator.

Immunogen

An E.coli-derived Zebrafish Catalase/CAT recombinant protein (amino acids Q53-H510) was used as the immunogen for the Zebrafish Catalase Antibody.

Storage

After reconstitution, the Zebrafish Catalase Antibody 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 Catalase antibody, Zebrafish CAT antibody, Zebrafish Peroxisomal Catalase antibody, Zebrafish Hydrogen Peroxide Degrading Enzyme antibody, Zebrafish Antioxidant Enzyme Catalase antibody, Zebrafish Catalase A antibody

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