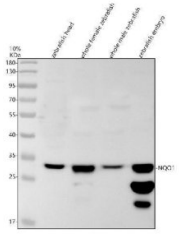
Zebrafish NQO1 Antibody / Quinone Oxidoreductase 1 Antibody (RZ1329)

Catalog No.	Formulation	Size
RZ1329	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	A0A2R8PW65
Applications	Western Blot : 0.5-1ug/ml
Limitations	This Zebrafish NQO1 Antibody / Quinone Oxidoreductase 1 Antibody is available for research use only.



Zebrafish NQO1 Antibody Oxidative Stress Enzyme WB. Western blot analysis of zebrafish head tissue, whole female zebrafish, whole male zebrafish, and zebrafish embryo lysates using Zebrafish NQO1 Antibody demonstrates a prominent immunoreactive band at approximately 30 kDa, consistent with the predicted molecular weight of NAD(P)H Quinone Oxidoreductase 1 (NQO1). NQO1 is a cytoprotective flavoprotein enzyme that catalyzes the reduction of quinones and functions as a key mediator of cellular antioxidant defense and detoxification pathways. Comparable detection across multiple zebrafish tissue sources supports the broad physiological role of NQO1 in maintenance of redox homeostasis and protection against oxidative stress. Electrophoresis was performed on a 10% SDS-PAGE gel under reducing conditions followed by transfer to a nitrocellulose membrane. Signal was detected using an HRP-conjugated secondary antibody and enhanced chemiluminescent substrate. Predicted molecular weight: ~30 kDa. Additional lower molecular weight bands are observed in the embryo lysate; the primary immunoreactive band is detected at approximately 30 kDa, consistent with the predicted molecular weight of NQO1.

Description

Zebrafish NQO1 Antibody / Quinone Oxidoreductase 1 Antibody recognizes NAD(P)H Quinone Oxidoreductase 1

(NQO1), a cytoprotective flavoprotein enzyme that plays a critical role in cellular defense against oxidative stress and electrophilic damage. NQO1 catalyzes the two-electron reduction of quinones to less reactive hydroquinones, thereby preventing the formation of semiquinone radicals and limiting the generation of reactive oxygen species. Through this activity, NQO1 contributes to maintenance of cellular redox balance and protection against oxidative injury. The highly conserved nature of antioxidant defense pathways has made zebrafish an important vertebrate model for studying NQO1 function in development, physiology, toxicology, and disease.

NQO1 is widely recognized as a major downstream target of the NRF2 signaling pathway, one of the principal regulators of cellular antioxidant responses. Under conditions of oxidative stress, electrophilic exposure, or environmental challenge, activation of NRF2 promotes transcription of NQO1 and numerous additional cytoprotective genes. Consequently, NQO1 expression is frequently used as a molecular indicator of oxidative stress responses and activation of cellular detoxification pathways. In zebrafish, NQO1 serves as a valuable marker for studies investigating redox biology, environmental toxicology, chemical exposure, and adaptive stress responses.

Beyond its detoxification function, NQO1 contributes to the stabilization and regulation of several proteins involved in cell survival, metabolism, and stress adaptation. The enzyme participates in maintenance of cellular homeostasis by protecting proteins and cellular structures from oxidative damage while supporting normal metabolic processes. Altered NQO1 expression has been associated with inflammatory responses, metabolic dysfunction, carcinogenesis, and age-related cellular changes in multiple vertebrate systems. As a result, NQO1 remains an important target in studies focused on disease mechanisms and cellular resilience.

Zebrafish provide unique advantages for examining NQO1 biology due to their rapid development, optical transparency, and sensitivity to environmental stressors. Researchers frequently monitor NQO1 expression during investigations of toxicant exposure, liver function, developmental abnormalities, oxidative injury, and regeneration. Because oxidative stress influences numerous physiological systems, NQO1 is commonly evaluated alongside other antioxidant enzymes and stress-response proteins to characterize cellular defense mechanisms and tissue responses to environmental or experimental challenges.

At NSJ Bioreagents, we provide highly validated antibodies for metabolism, toxicology, developmental biology, and zebrafish research. Zebrafish NQO1 Antibody targets a key enzyme involved in antioxidant defense, quinone detoxification, and cellular stress responses. NQO1 expression is widely studied in the context of oxidative stress, NRF2 signaling, environmental toxicology, metabolism, and tissue protection. Continued investigation of this important cytoprotective enzyme is expanding our understanding of the molecular pathways that maintain cellular homeostasis and protect vertebrate tissues from oxidative damage.

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 NQO1 Antibody / Quinone Oxidoreductase 1 Antibody should be determined empirically by the investigator.

Immunogen

An E.coli-derived Zebrafish NAD(P)H Quinone Oxidoreductase 1 recombinant protein (amino acids S14-A249) was used as the immunogen for the Zebrafish NQO1 Antibody.

Storage

After reconstitution, the Zebrafish NQO1 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 NAD(P)H Quinone Oxidoreductase 1 Antibody, Zebrafish Quinone Reductase 1 Antibody, Zebrafish DT-

Diaphorase Antibody, Zebrafish Detoxification Enzyme Antibody, Zebrafish Oxidative Stress Marker Antibody, Zebrafish Phase II Metabolism Antibody