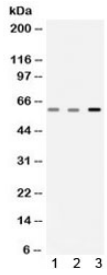
Catalase Antibody / Antioxidant Enzyme Antibody (R32390)

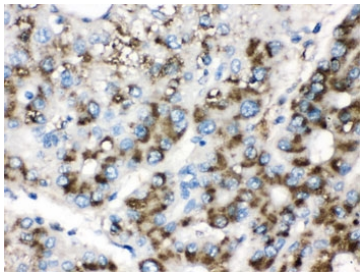
Catalog No.	Formulation	Size
R32390	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

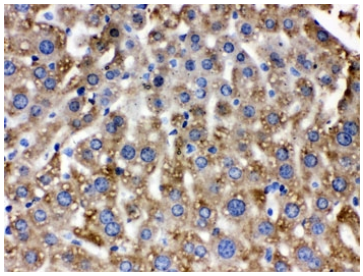
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2.5% BSA and 0.025% sodium azide
UniProt	P04040
Localization	Cytoplasmic
Applications	Western blot: 0.1-0.5ug/ml IHC (FFPE): 0.5-1ug/ml
Limitations	This Catalase Antibody / Antioxidant Enzyme Antibody is available for research use only.



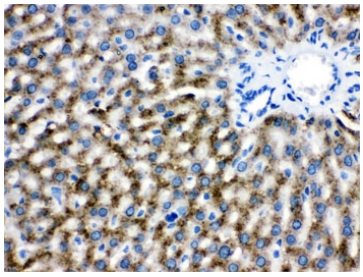
Catalase Antibody / Antioxidant Enzyme Antibody WB. Western blot analysis of 1) rat skeletal muscle, 2) mouse skeletal muscle, and 3) human A549 lysates using Catalase Antibody / Antioxidant Enzyme Antibody. A distinct immunoreactive band is detected at approximately 60 kDa in all three samples, consistent with the expected molecular weight of catalase, supporting specific detection of the endogenous antioxidant enzyme across rat, mouse, and human samples.



IHC testing of FFPE human liver cancer tissue with Catalase antibody. HIER: Boil the paraffin sections in pH 6, 10mM citrate buffer for 20 minutes and allow to cool prior to testing.



Catalase Antibody / Antioxidant Enzyme Antibody Human Liver Cancer IHC. Immunohistochemical staining of FFPE human liver cancer tissue using Catalase Antibody / Antioxidant Enzyme Antibody. Catalase expression is detected predominantly within the cytoplasm of tumor cells, consistent with its localization in peroxisomes and its role in detoxifying hydrogen peroxide to protect cells from oxidative stress. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 6, 10 mM citrate buffer for 20 minutes and allowing them to cool prior to immunostaining.



Catalase Antibody / Antioxidant Enzyme Antibody Rat Liver IHC. Immunohistochemical staining of FFPE rat liver tissue using Catalase Antibody / Antioxidant Enzyme Antibody. Catalase expression is detected predominantly within the cytoplasm of hepatocytes, consistent with its localization in peroxisomes and its critical role in hydrogen peroxide detoxification and maintenance of cellular redox homeostasis. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 6, 10 mM citrate buffer for 20 minutes and allowing them to cool prior to immunostaining.

Description

Catalase Antibody / Antioxidant Enzyme Antibody recognizes catalase (CAT), a highly conserved antioxidant enzyme that protects cells against oxidative damage by catalyzing the decomposition of hydrogen peroxide into water and oxygen. As one of the principal enzymatic defenses against reactive oxygen species, catalase preserves cellular redox homeostasis and prevents accumulation of toxic peroxide generated during normal metabolism and oxidative stress. The enzyme is expressed in virtually all aerobic organisms and is especially abundant in tissues with high metabolic activity. Catalase Antibody / Antioxidant Enzyme Antibody is widely used to investigate oxidative stress, antioxidant defense, and peroxisome biology.

Catalase is localized predominantly within peroxisomes, where it detoxifies hydrogen peroxide produced during fatty acid beta oxidation and numerous additional oxidative metabolic reactions. The enzyme functions in concert with superoxide dismutases, glutathione peroxidases, and other antioxidant systems to maintain cellular homeostasis and protect proteins, lipids, and nucleic acids from oxidative injury. Beyond its classical antioxidant role, catalase contributes to regulation of redox-sensitive signaling pathways that influence cell proliferation, differentiation, apoptosis, inflammation, and aging.

Altered catalase expression or activity has been associated with a broad range of pathological conditions, including neurodegenerative disease, cardiovascular disease, diabetes, chronic inflammation, liver injury, pulmonary disorders, and cancer. Oxidative stress is recognized as a major contributor to disease progression in many tissues, making catalase an important biomarker for evaluating antioxidant capacity and cellular responses to oxidative injury. Consequently, catalase remains an active area of investigation in toxicology, metabolism, aging research, regenerative medicine, and cancer biology.

NSJ Bioreagents' Catalase Antibody / Antioxidant Enzyme Antibody provides researchers with a dependable reagent for immunohistochemistry, western blotting, immunofluorescence, flow cytometry, and additional immunodetection applications. These antibodies enable reliable detection of endogenous catalase expression while supporting studies of oxidative stress, hydrogen peroxide metabolism, peroxisome function, and antioxidant defense mechanisms. Whether investigating normal physiology or disease-associated oxidative damage, Catalase Antibody / Antioxidant Enzyme Antibody delivers a robust tool for advanced biological research.

Explore additional antibodies involved in oxidative metabolism, redox homeostasis, and cellular energy regulation on our Metabolism Antibodies page.

Application Notes

Optimal dilution of the Catalase Antibody / Antioxidant Enzyme Antibody should be determined by the researcher.

Immunogen

Amino acids E344-L527 of the human protein were used as the immunogen for the Catalase antibody.

Storage

After reconstitution, the 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

Catalase antibody, CAT antibody, Peroxisomal Catalase antibody, Hydrogen Peroxide Degrading Enzyme antibody, Antioxidant Enzyme antibody, Hydroperoxidase antibody

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