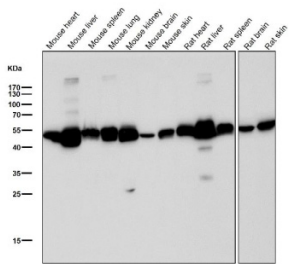
ALDH2 Antibody / Aldehyde dehydrogenase 2 [clone 31A72] (FY12267)

Catalog No.	Formulation	Size
FY12267	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA	100 ul

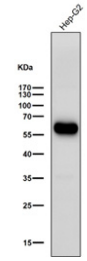
Recombinant RABBIT MONOCLONAL

Bulk quote request

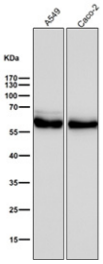
Availability	2-3 weeks
Species Reactivity	Human, Mouse, Rat
Format	Liquid
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	31A72
Purity	Affinity-chromatography
Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.
UniProt	P05091
Applications	Western blot: 1:500-1:2000
Limitations	This ALDH2 antibody is available for research use only.



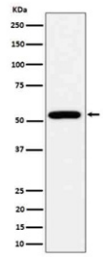
ALDH2 Antibody Multi-Species Tissue WB. Western blot analysis of ALDH2 expression was performed using ALDH2 antibody clone 31A72 in a panel of mouse and rat tissue lysates. Samples include mouse heart, liver, spleen, lung, kidney, brain, skin, as well as rat heart, liver, spleen, brain, and skin. ALDH2, also known as Aldehyde Dehydrogenase 2, is a mitochondrial enzyme that catalyzes the oxidation of reactive aldehydes generated during alcohol metabolism, lipid peroxidation, and oxidative stress. A prominent immunoreactive band is detected at approximately 56 kDa across multiple tissues, corresponding to the expected molecular weight of ALDH2. The widespread expression observed is consistent with the essential role of ALDH2 in mitochondrial detoxification and metabolic homeostasis throughout diverse organ systems. All lanes were probed with ALDH2 antibody clone 31A72 at a 1:3000 dilution for 1 hour at room temperature. These results support the utility of ALDH2 Antibody for studies of aldehyde metabolism, mitochondrial biology, oxidative stress responses, and tissue-specific metabolic regulation.



ALDH2 Antibody HepG2 WB. Western blot analysis of ALDH2 expression was performed using anti-ALDH2 antibody in human HepG2 cell lysate. ALDH2, also known as Aldehyde Dehydrogenase 2, is a mitochondrial enzyme that catalyzes the detoxification of reactive aldehydes generated during alcohol metabolism, lipid peroxidation, and oxidative stress. A strong immunoreactive band is detected at approximately 56 kDa, corresponding to the predicted molecular weight of ALDH2. Robust expression in HepG2 hepatocellular carcinoma cells is consistent with the important role of ALDH2 in hepatic aldehyde metabolism and mitochondrial detoxification pathways. The blot was probed with ALDH2 antibody at a 1:3000 dilution for 1 hour at room temperature. These results support the utility of ALDH2 Antibody for studies of aldehyde metabolism, mitochondrial function, oxidative stress responses, and liver biology.



ALDH2 Antibody A549 and Caco-2 WB. Western blot analysis of ALDH2 expression was performed using anti-ALDH2 antibody in human A549 and Caco-2 cell lysates. ALDH2, also known as Aldehyde Dehydrogenase 2, is a mitochondrial enzyme that catalyzes the oxidation and detoxification of reactive aldehydes generated during alcohol metabolism, lipid peroxidation, and oxidative stress. Lane 1: A549 lysate. Lane 2: Caco-2 lysate. A prominent immunoreactive band is detected at approximately 56 kDa in both cell lines, corresponding to the expected molecular weight of ALDH2. Expression in lung carcinoma-derived A549 cells and intestinal epithelial-derived Caco-2 cells is consistent with the widespread requirement for mitochondrial aldehyde detoxification and cellular protection against oxidative damage. All lanes were probed with ALDH2 antibody at a 1:3000 dilution for 1 hour at room temperature. These results support the utility of ALDH2 Antibody for studies of aldehyde metabolism, mitochondrial function, oxidative stress responses, and cellular detoxification pathways.



Western blot analysis of ALDH2 expression in HepG2 cell lysate using ALDH2 antibody.

Description

ALDH2 antibody detects aldehyde dehydrogenase 2, a mitochondrial enzyme that catalyzes the oxidation of acetaldehyde and other toxic aldehydes into less reactive carboxylic acids. ALDH2 belongs to the aldehyde dehydrogenase superfamily and is highly expressed in liver, heart, and skeletal muscle. It plays a crucial role in alcohol metabolism, detoxification of lipid peroxidation products, and protection against oxidative stress.

Research using ALDH2 antibody has revealed the enzyme's central importance in human health. ALDH2 metabolizes acetaldehyde generated during ethanol metabolism, preventing toxic accumulation that causes alcohol flushing and tissue damage. A common polymorphism, ALDH2*2, prevalent in East Asian populations, reduces enzymatic activity and leads to heightened acetaldehyde sensitivity. This variant is associated with increased risk of esophageal cancer, cardiovascular disease, and alcohol intolerance.

Beyond alcohol metabolism, ALDH2 detoxifies reactive aldehydes such as 4-hydroxynonenal (4-HNE) and malondialdehyde, protecting cells from oxidative damage. Reduced ALDH2 activity increases susceptibility to ischemic injury, neurodegeneration, and metabolic disorders. In cardiovascular research, ALDH2 has been shown to protect against myocardial infarction and heart failure by detoxifying aldehydes generated during ischemic stress. Pharmacological activation of ALDH2 has been investigated as a therapeutic strategy for cardiovascular protection.

In cancer research, altered ALDH2 expression contributes to tumor progression and therapy response. High ALDH activity, often considered a stem cell marker, confers chemoresistance and supports cancer stem cell survival. ALDH2 also intersects with mitochondrial metabolism, influencing cellular redox states and survival pathways.

Antibodies against ALDH2 are validated for western blot, immunohistochemistry, immunofluorescence, and ELISA. These reagents enable detection of mitochondrial localization, quantification of expression, and monitoring of activity under stress conditions. They provide tools for studying alcohol-related disease, cardiovascular protection, and cancer biology.

NSJ Bioreagents provides this ALDH2 antibody for studies in metabolism, toxicology, and mitochondrial biology.

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.

Application Notes

Optimal dilution of the ALDH2 antibody should be determined by the researcher.

Immunogen

A synthesized peptide derived from human ALDH2 was used as the immunogen for the ALDH2 antibody.

Storage

Store the ALDH2 antibody at -20oC.

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