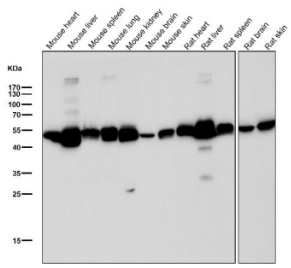
ALDH2 Antibody / Aldehyde dehydrogenase 2 [clone 31A72] (FY12267)

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

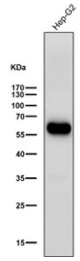
Recombinant RABBIT MONOCLONAL

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.



All lanes use the ALDH2 antibody at 1:3K dilution for 1 hour at room temperature.



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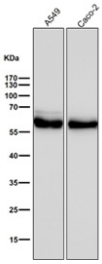

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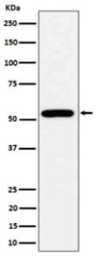

Western blot analysis of ALDH2 expression in HepG2 cell lysate using ALDH2 antibody.

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.

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.