BOSTER BIOLOGICAL TECHNOLOGY
3942 B Valley Ave, Pleasanton, CA 94566
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Anti-ALDH2 Antibody Picoband®

Catalog Number: PB9472

About ALDH2

ALDH2 (Aldehyde Dehydrogenase 2 Family) is a human gene. The enzyme encoded by this gene belongs to the aldehyde dehydrogenase family of enzymes that catalyze the chemical transformation from acetaldehyde to acetic acid. Aldehyde dehydrogenase is the second enzyme of the major oxidative pathway of alcohol metabolism. Hsu et al. (1985) assigned the ALDH2 locus to chromosome 12 by means of a cDNA probe and Southern blot analysis of somatic cell hybrids. Using an unbiased proteomic search, Chen et al. (2008) identified mitochondrial ALDH2 as an enzyme whose activation correlated with reduced ischemic heart damage in rodent models. A high-throughput screen identified a small molecule activator of ALDH2, which they called Alda-1, that, when administered to rats before an ischemic event, reduced infarct size by 60%, most likely through its inhibitory effect on the formation of cytotoxic aldehydes.

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Overview

Product Name	Anti-ALDH2 Antibody Picoband®
Reactive Species	Human, Mouse, Rat
Description	Boster Bio Anti-ALDH2 Antibody Picoband® catalog # PB9472. Tested in Flow Cytometry, IHC, WB applications. This antibody reacts with Human, Mouse, Rat. The brand Picoband indicates this is a premium antibody that guarantees superior quality, high affinity, and strong signals with minimal background in Western blot applications. Only our best-performing antibodies are designated as Picoband, ensuring unmatched performance.
Application	Flow Cytometry, IHC, WB
Clonality	Polyclonal
Formulation	Each vial contains 4 mg Trehalose, 0.9 mg NaCl and 0.2 mg Na2HPO4.
Storage Instructions	Store at -20˚C for one year from date of receipt. After reconstitution, at 4˚C for one month. It can also be aliquotted and stored frozen at -20˚C for six months. Avoid repeated freeze-thaw cycles.
Host	Rabbit
Uniprot ID	P05091

Technical Details

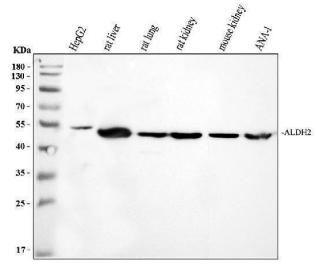
Immunogen	A synthetic peptide corresponding to a sequence at the N-terminus of human ALDH2, different

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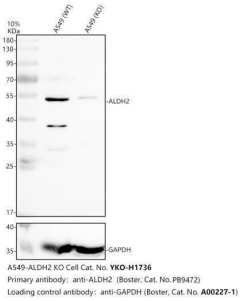
	from the related mouse sequence by two amino acids, and from the related rat sequence by one amino acid.
Recommended Detection Systems	Boster recommends Enhanced Chemiluminescent Kit with anti-Rabbit IgG (EK1002) for Western blot, and HRP Conjugated anti-Rabbit IgG Super Vision Assay Kit (SV0002-1) for IHC(P) and ICC.
Cross Reactivity	No cross-reactivity with other proteins
Isotype	Rabbit IgG
Form	Lyophilized
Concentration	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml.
Purification	Immunogen affinity purified.
Suggested Dilutions	Western blot, 0.1-0.5ug/ml, Human, Mouse, Rat Immunohistochemistry (Paraffin-embedded Section), 2-5ug/ml, Human Flow Cytometry(Fixed), 1-3 ug/1x10^6 cells, Human Note: For flow cytometry (FCM), suitable for fixed cells only. Not suitable for FACS or surface flow cytometry using live cells.

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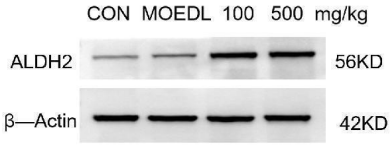
Anti-ALDH2 Antibody Picoband® (PB9472) Images



Western blot analysis of ALDH2 using anti-ALDH2 antibody (PB9472). Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions. Lane 1: human HepG2 whole cell lysates, Lane 2: rat liver tissuelysates, Lane 3: rat lung tissue lysates, Lane 4: rat kidney tissue lysates, Lane 5: mouse kidney tissue lysates, Lane 6: mouse ANA-1 whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-ALDH2 antigen affinity purified polyclonal antibody (PB9472) at 0.5 ug/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody (Catalog # BA1054) at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an ECL Plus Western Blotting Substrate (Catalog # AR1196-200) with Tanon 5200 system. A specific band was detected for ALDH2 at approximately 56 kDa. The expected band size for ALDH2 is at 56 kDa.



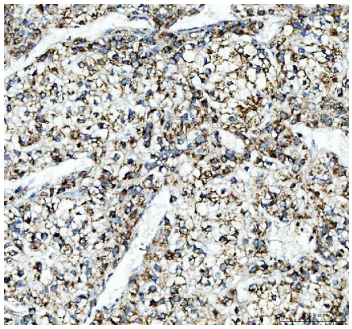
Western blot analysis of ALDH2 using anti-ALDH2 antibody (PB9472). Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions. Lane 1: human A549-WT whole cell lysates, Lane 2: human A549-ALDH2 KO whole cell lysates.After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-ALDH2 antigen affinity purified polyclonal antibody (PB9472) at 0.5 ug/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an ECL Plus Western Blotting Substrate (Catalog # AR1196-200) with Tanon 5200 system. A specific band was detected for ALDH2 at approximately 56 kDa. The expected band size for ALDH2 is at 56 kDa.



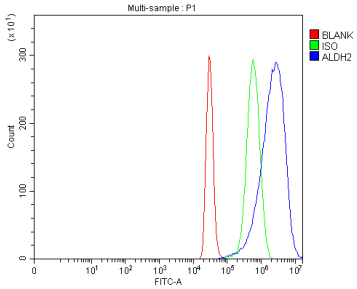
Western blot analysis of ALDH2 using anti-ALDH2 antibody (PB9472). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions. Lane 1: Control group-mouse hippocampus tissue, Lane 2: Model group-mouse hippocampus tissue, Lane 3: Drug treatment (100 mg/kg) – Mouse hippocampus tissue, Lane 4: : Drug treatment (100 mg/kg) – Mouse hippocampus tissue. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5%

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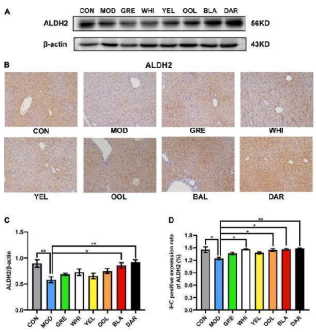
non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-ALDH2 antigen affinity purified polyclonal antibody (PB9472) overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody (Catalog # BA1054) for 1 hour at RT. The signal is developed using an ECL Plus Western Blotting Substrate (Catalog # AR1196-200) with ChemiDoc MP system. A specific band was detected for ALDH2 at approximately 56 kDa. The expected band size for ALDH2 is at 56 kDa.



IHC analysis of ALDH2 using anti-ALDH2 antibody (PB9473). ALDH2 was detected in a paraffin-embedded section of human liver cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-ALDH2 Antibody (PB9473) overnight at 4°C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.



Flow Cytometry analysis of HepG2 cells using anti-ALDH2 antibody (PB9472). Overlay histogram showing HepG2 cells stained with PB9472 (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-ALDH2 Antibody (PB9472, 1 ug/1x106 cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-rabbit IgG (BA1127, 5-10 ug/1x106 cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was rabbit IgG (1 ug/1x106) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



Effects of WEATs on ALDH2 expression in the liver of mice. Representative immunoblots (A) and IHC images (B) of ALDH2 expression in the liver. Quantification of ALDH2 expression by western blotting (C) and IHC (D) . Each value represents the mean ± SEM (n = 9). * $p < 0.05$ vs. MOD; ** $p < 0.01$ vs. MOD.Index in PubMed under a CC BY license. PMID: 35677547

1 Publications Citing This Product

1. PubMed ID: 31935835, Li Y,Chen F,Chen J,Chan S,He Y,Liu W,Zhang G.Disulfiram/Copper Induces Antitumor Activity against Both Nasopharyngeal Cancer Cells and Cancer-Associated Fibroblasts through ROS/MAPK and Ferroptosis Pathways.Cancers (Basel).2020 Jan 6;12(1):138.doi:10.3390

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Anti-ALDH2 Antibody

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