10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Anti-ALDH2 Antibody Picoband™ (monoclonal, 5G7)

Catalog # ABO14889

Specification

Anti-ALDH2 Antibody Picoband™ (monoclonal, 5G7) - Product Information

Application	**WB, IF, ICC, FC**
Primary Accession	P05091
Host	**Mouse**
Isotype	**Mouse IgG2a**
Reactivity	**Rat, Human, Mouse**
Clonality	**Monoclonal**
Format	**Lyophilized**

Description
Anti-ALDH2 Antibody Picoband™ (monoclonal, 5G7) . Tested in Flow Cytometry, IF, ICC, WB applications. This antibody reacts with Human, Mouse, Rat.

Reconstitution
Add 0.2ml of distilled water will yield a concentration of 500 µg/ml.

Anti-ALDH2 Antibody Picoband™ (monoclonal, 5G7) - Additional Information

Gene ID 217

Other Names
Aldehyde dehydrogenase, mitochondrial, 1.2.1.3, ALDH class 2, ALDH-E2, ALDHI, ALDH2, ALDM

Calculated MW
56 kDa KDa

Application Details
Western blot, 0.1-0.5 µg/ml, Human, Mouse, Rat
 Immunocytochemistry/Immunofluorescence, 2 µg/ml, Human
 Flow Cytometry, 1-3 µg/1x10^6 cells, Human

Subcellular Localization
Mitochondrion matrix

Contents
Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg Na₂HPO₄, 0.05mg NaN₃.

Immunogen
A synthetic peptide corresponding to a sequence at the N-terminus of human ALDH2, different from the related mouse sequence by two amino acids, and from the related rat sequence by one amino acid.

Cross Reactivity
No cross-reactivity with other proteins.

Storage	**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.

Anti-ALDH2 Antibody Picoband™ (monoclonal, 5G7) - Protein Information

Name ALDH2

Synonyms ALDM

Function
Required for clearance of cellular formaldehyde, a cytotoxic and carcinogenic metabolite that induces DNA damage.

Cellular Location
Mitochondrion matrix.

Anti-ALDH2 Antibody Picoband™ (monoclonal, 5G7) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Anti-ALDH2 Antibody Picoband™ (monoclonal, 5G7) - Images

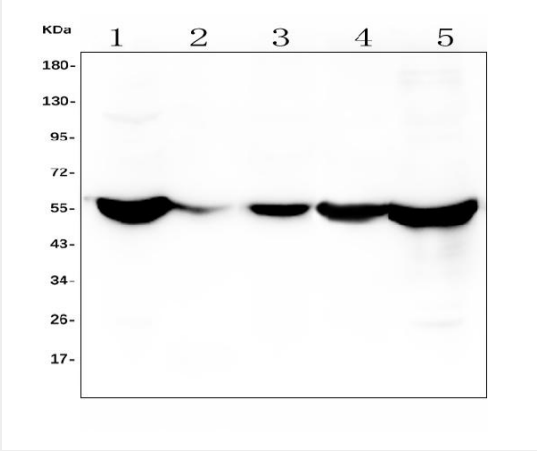

Figure 1. Western blot analysis of ALDH2 using anti-ALDH2 antibody (M00546-1).
Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 50ug of sample under reducing conditions.
Lane 1: human HepG2 tissue lysates,

Lane 2: human placenta whole cell lysates,
Lane 3: human HEK293 whole cell lysates,
Lane 4: human SHG-44 whole cell lysates,
Lane 5: human THP-1 whole cell lysates,
After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with mouse anti-ALDH2 antigen affinity purified polyclonal antibody (Catalog # M00546-1) at 0.5 µg/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-mouse IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1001) with Tanon 5200 system. A specific band was detected for ALDH2 at approximately 56KD. The expected band size for ALDH2 is at 56KD.

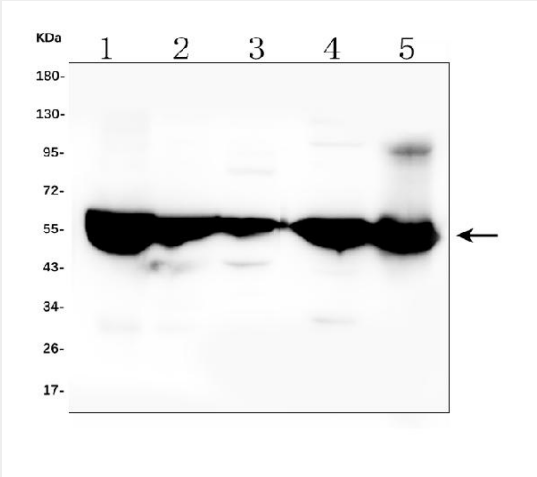

Figure 2. Western blot analysis of ALDH2 using anti-ALDH2 antibody (M00546-1).
Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 50ug of sample under reducing conditions.
Lane 1: rat liver tissue lysates,
Lane 2: rat kidney whole cell lysates,
Lane 3: rat heart whole cell lysates,
Lane 4: mouse liver whole cell lysates,
Lane 5: mouse kidney whole cell lysates,
After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with mouse anti-ALDH2 antigen affinity purified polyclonal antibody (Catalog # M00546-1) at 0.5 µg/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-mouse IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1001) with Tanon 5200 system. A specific band was detected for ALDH2 at approximately 56KD. The expected band size for ALDH2 is at 56KD.

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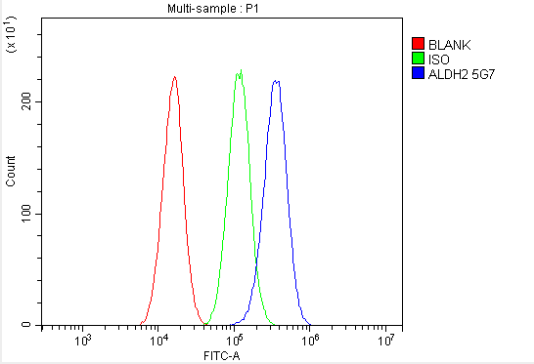

Figure 3. Flow Cytometry analysis of A549 cells using anti-ALDH2 antibody (M00546-1).
Overlay histogram showing A549 cells stained with M00546-1 (Blue line).The cells were blocked with 10% normal goat serum. And then incubated with mouse anti-ALDH2 Antibody (M00546-1, 1 µg/1x10^6 cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-mouse IgG (BA1126, 5-10 µg/1x10^6 cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was mouse IgG (1 µg/1x10^6) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

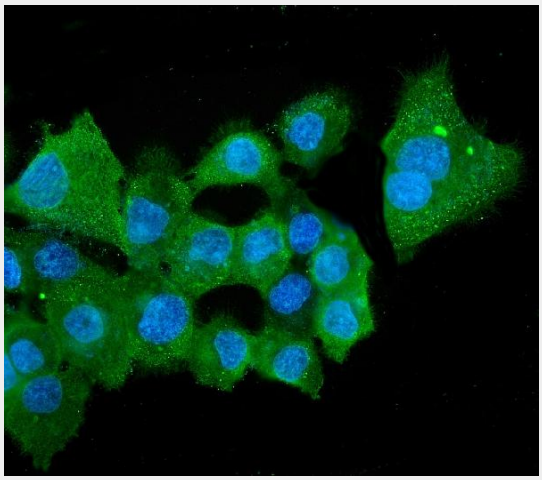

Figure 4. IF analysis of ALDH2 using anti-ALDH2 antibody (M00546-1).
ALDH2 was detected in immunocytochemical section of A431 cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 2 µg/mL mouse anti-ALDH2 Antibody (M00546-1) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Mouse IgG (BA1126) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

Anti-ALDH2 Antibody Picoband™ (monoclonal, 5G7) - Background

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.