Anti-ALDH2 Antibody [E4-D10-R]

HA601175

Product Type:	Recombinant Mouse monoclonal IgG1, primary antibodies
Species reactivity:	Human, Mouse, Rat
Applications:	WB, IHC-P, IF-Cell
Molecular Wt:	Predicted band size: 56.4 kDa
Clone number:	E4-D10-R

Description: Aldehyde dehydrogenases (ALDHs) mediate NADP+-dependent oxidation of aldehydes into acids during detoxification of alcohol-derived acetaldehyde; lipid peroxidation; and metabolism of corticosteroids, biogenic amines and neurotransmitters. ALDH1A1, also designated retinal dehydrogenase 1 (RalDH1 or RALDH1); aldehyde dehydrogenase family 1 member A1; aldehyde dehydrogenase cytosolic; ALDHII; ALDH-E1 or ALDH E1, is a retinal dehydrogenase that participates in the biosynthesis of retinoic acid (RA). The major liver isoform ALDH1 localizes to cytosolic space, while ALDH2 localizzes to the mitochondria. The ALDH1A2 (RALDH2, RALDH2-T) gene produces three different transcripts and also catalyzes the synthesis of RA from retinaldehyde. ALDH2 is present in most Caucasians, yet is absent in 50% of Asians. The absence of this enzyme has been linked to alcohol intolerance; and thusly, a reduced risk for alcoholism-related liver disease.

Immunogen: Synthetic peptide within Human ALDH2 aa 468-517 / 517.

Positive control: HepG2 cell lysate, A549 cell lysate, NIH/3T3 cell lysate, mouse liver tissue lysate, rat liver tissue lysate, HeLa, SK-Br-3, human gallbladder tissue, human liver tissue, mouse liver tissue, rat liver tissue.

Subcellular location: Mitochondrion matrix.

Database links: SwissProt: P05091 Human | P47738 Mouse | P11884 Rat

Recommended Dilutions:

WB	1:1,000
IHC-P	1:200-1:1,000
IF-Cell	1:250

Storage Buffer: PBS (pH7.4), 0.1% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.

Storage Instruction: Shipped at 4℃. Store at +4℃ short term (1-2 weeks). It is recommended to aliquot into single-use upon delivery. Store at -20℃ long term.

Purity: Protein A affinity purified.

Images

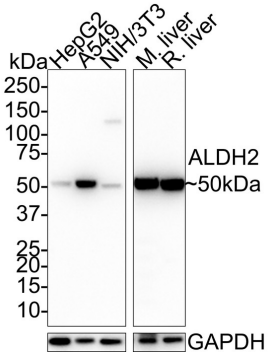

Fig1: Western blot analysis of ALDH2 on different lysates with Mouse anti-ALDH2 antibody (HA601175) at 1/1,000 dilution.

Lane 1: HepG2 cell lysate (20 µg/Lane)
Lane 2: A549 cell lysate (20 µg/Lane)
Lane 3: NIH/3T3 cell lysate (20 µg/Lane)
Lane 4: Mouse liver tissue lysate (40 µg/Lane)
Lane 5: Rat liver tissue lysate (40 µg/Lane)

Predicted band size: 56 kDa
Observed band size: 50 kDa

Exposure time: 40 seconds;

4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (HA601175) at 1/1,000 dilution was used in 5% NFDM/TBST at room temperature for 2 hours. Goat Anti-Mouse IgG - HRP Secondary Antibody (HA1006) at 1/100,000 dilution was used for 1 hour at room temperature.

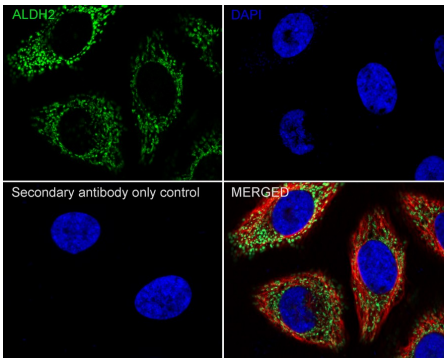

Fig2: Immunocytochemistry analysis of HeLa cells labeling ALDH2 with Mouse anti-ALDH2 antibody (HA601175) at 1/250 dilution.

Cells were fixed in 4% paraformaldehyde for 20 minutes at room temperature, permeabilized with 0.1% Triton X-100 in PBS for 5 minutes at room temperature, then blocked with 1% BSA in 10% negative goat serum for 1 hour at room temperature. Cells were then incubated with Mouse anti-ALDH2 antibody (HA601175) at 1/250 dilution in 1% BSA in PBST overnight at 4 ℃. Goat Anti-Mouse IgG H&L (iFluor™ 488, HA1125) was used as the secondary antibody at 1/1,000 dilution. PBS instead of the primary antibody was used as the secondary antibody only control. Nuclear DNA was labelled in blue with DAPI.

beta Tubulin (ET1602-4, red) was stained at 1/100 dilution overnight at +4℃. Goat Anti-Rabbit IgG H&L (iFluor™ 594, HA1122) were used as the secondary antibody at 1/1,000 dilution.

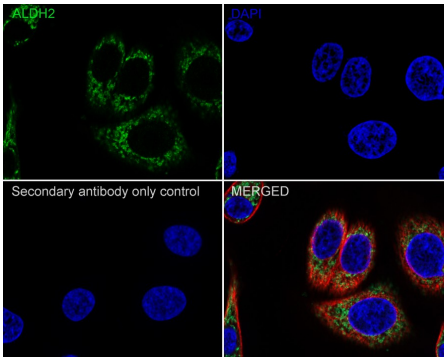

Fig3: Immunocytochemistry analysis of SK-Br-3 cells labeling ALDH2 with Mouse anti-ALDH2 antibody (HA601175) at 1/250 dilution.

Cells were fixed in 4% paraformaldehyde for 20 minutes at room temperature, permeabilized with 0.1% Triton X-100 in PBS for 5 minutes at room temperature, then blocked with 1% BSA in 10% negative goat serum for 1 hour at room temperature. Cells were then incubated with Mouse anti-ALDH2 antibody (HA601175) at 1/250 dilution in 1% BSA in PBST overnight at 4 ℃. Goat Anti-Mouse IgG H&L (iFluor™ 488, HA1125) was used as the secondary antibody at 1/1,000 dilution. PBS instead of the primary antibody was used as the secondary antibody only control. Nuclear DNA was labelled in blue with DAPI.

beta Tubulin (ET1602-4, red) was stained at 1/100 dilution overnight at +4℃. Goat Anti-Rabbit IgG H&L (iFluor™ 594, HA1122) were used as the secondary antibody at 1/1,000 dilution.

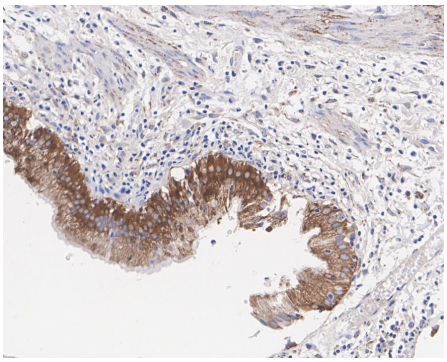

Fig4: Immunohistochemical analysis of paraffin-embedded human gallbladder tissue with Mouse anti-ALDH2 antibody (HA601175) at 1/200 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA601175) at 1/200 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

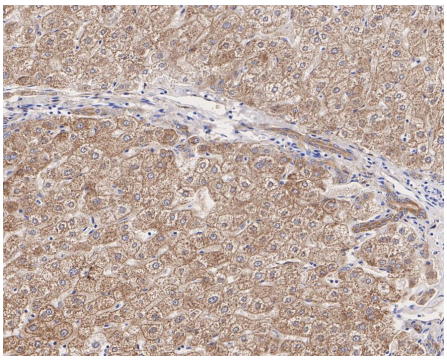

Fig5: Immunohistochemical analysis of paraffin-embedded human liver tissue with Mouse anti-ALDH2 antibody (HA601175) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA601175) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

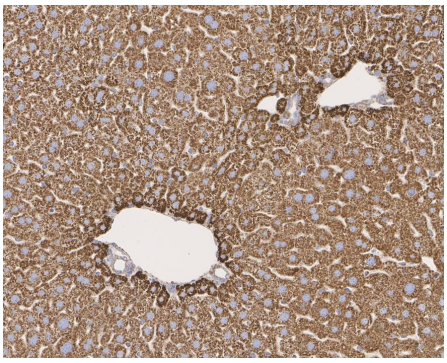

Fig6: Immunohistochemical analysis of paraffin-embedded mouse liver tissue with Mouse anti-ALDH2 antibody (HA601175) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA601175) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

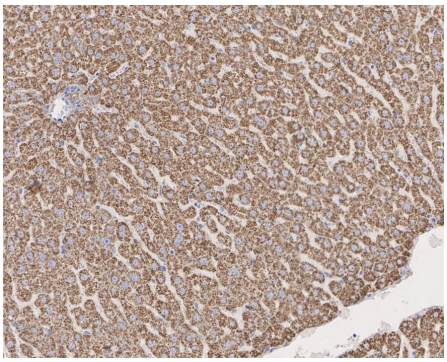

Fig7: Immunohistochemical analysis of paraffin-embedded rat liver tissue with Mouse anti-ALDH2 antibody (HA601175) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA601175) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

Background References

1. Yu YH et al. PKC-ALDH2 Pathway Plays a Novel Role in Adipocyte Differentiation. PLoS One 11:e0161993 (2016).
2. Ferrand N et al. Loss of WISP2/CCN5 in estrogen-dependent MCF7 human breast cancer cells promotes a stem-like cell phenotype. PLoS One 9:e87878 (2014).