# Anti-ALDH2 Antibody [7-D8]

## M1501-7

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|---|---|
| **Product Type:** | Mouse monoclonal IgG1, primary antibodies |
| **Species reactivity:** | Human, Mouse, Rat |
| **Applications:** | WB, IF-Cell, IHC-P |
| **Molecular Wt:** | Predicted band size: 56 kDa |
| **Clone number:** | 7-D8 |

**Description:** Aldehyde dehydrogenase 2 family (mitochondrial), also known as ALDH2, is a human gene found on chromosome 12. Two major liver isoforms of this enzyme, cytosolic and mitochondrial, can be distinguished by their electrophoretic mobilities, kinetic properties, and subcellular localizations. The ALDH2 gene encodes a mitochondrial isoform, which has a low Km for acetaldehydes, and is localized in mitochondrial matrix. Most Europeans have two major isozymes, while approximately 50% of Northeast Asians have one normal copy of the ALDH2 gene and one mutant copy that encodes an inactive mitochondrial isoenzyme. A remarkably higher frequency of acute alcohol intoxication among Northeast Asians than among Europeans has been repeatedly shown to be related to the very much reduced activity of the mutant ALDH2-2 isoenzyme.

**Immunogen:** Synthetic peptide within Human ALDH2 aa 1-50 / 517.

**Positive control:** 293T cell lysate, HepG2 cell lysate, K-562 cell lysate, A549 cell lysate, THP-1 cell lysate, human liver tissue lysate, mouse liver tissue lysate, rat liver tissue lysate, rat testis tissue lysate, HepG2, human gastric carcinoma tissue, human colon carcinoma 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:**

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| **WB** | 1:1,000 |
| **IF-Cell** | 1:100-1:200 |
| **IHC-P** | 1:200-1:500 |

**Storage Buffer:** 1*PBS (pH7.4), 0.2% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.

**Storage Instruction:** Store at +4℃ after thawing. Aliquot store at -20℃ or -80℃. Avoid repeated freeze / thaw cycles.

**Purity:** Protein A affinity purified.

## Images

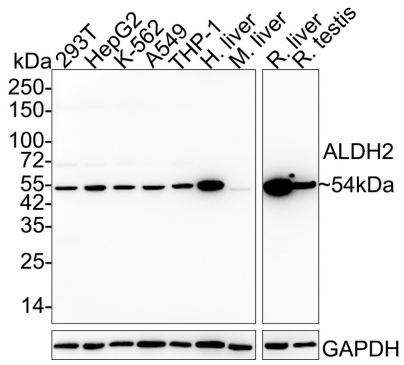


**Fig1:** Western blot analysis of ALDH2 on different lysates with Mouse anti-ALDH2 antibody (M1501-7) at 1/1,000 dilution.

Lane 1: 293T cell lysate (20 µg/Lane)
Lane 2: HepG2 cell lysate (20 µg/Lane)
Lane 3: K-562 cell lysate (20 µg/Lane)
Lane 4: A549 cell lysate (20 µg/Lane)
Lane 5: THP-1 cell lysate (20 µg/Lane)
Lane 6: Human liver tissue lysate (40 µg/Lane)
Lane 7: Mouse liver tissue lysate (40 µg/Lane)
Lane 8: Rat liver tissue lysate (40 µg/Lane)
Lane 9: Rat testis tissue lysate (40 µg/Lane)

Predicted band size: 56 kDa
Observed band size: 54 kDa

Exposure time: 1 minute 30 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 (M1501-7) at 1/1,000 dilution was used in 5% NFDM/TBST at 4℃ overnight. Goat Anti-Mouse IgG - HRP Secondary Antibody (HA1006) at 1/50,000 dilution was used for 1 hour at room temperature.

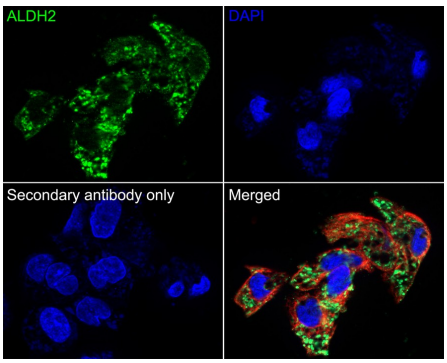


**Fig2:** Immunocytochemistry analysis of HepG2 cells labeling ALDH2 with Mouse anti-ALDH2 antibody (M1501-7) at 1/100 dilution.

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 (M1501-7) at 1/100 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.

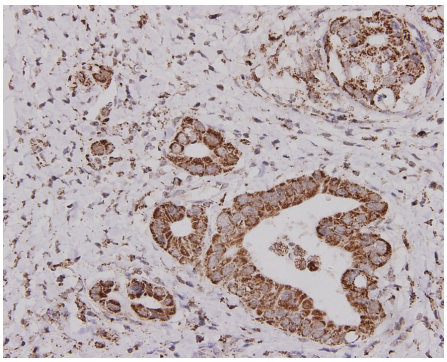

**Fig3:** Immunohistochemical analysis of paraffin-embedded human gastric carcinoma tissue using anti- ALDH2 mouse mAb.

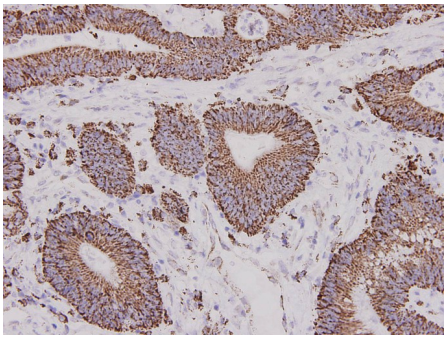

**Fig4:** Immunohistochemical analysis of paraffin-embedded human colon carcinoma tissue using anti- ALDH2 mouse mAb.

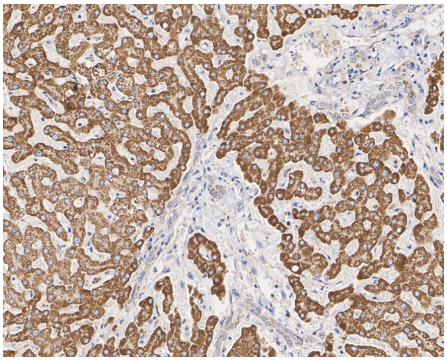

**Fig5:** Immunohistochemical analysis of paraffin-embedded human liver tissue with Mouse anti-ALDH2 antibody (M1501-7) at 1/2,000 dilution.

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 (M1501-7) at 1/2,000 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.

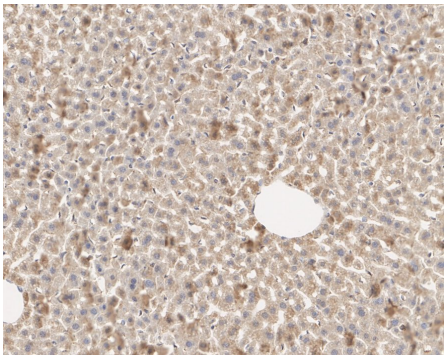

**Fig6:** Immunohistochemical analysis of paraffin-embedded mouse liver tissue with Mouse anti-ALDH2 antibody (M1501-7) at 1/500 dilution.

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 (M1501-7) at 1/500 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.

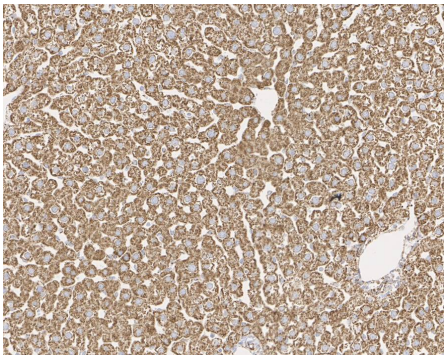

**Fig7:** Immunohistochemical analysis of paraffin-embedded rat liver tissue with Mouse anti-ALDH2 antibody (M1501-7) at 1/2,000 dilution.

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 dd$H_2O$ and PBS, and then probed with the primary antibody (M1501-7) at 1/2,000 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. Hempel J, Kaiser R, J rnvall H (1985). "Mitochondrial aldehyde dehydrogenase from human liver. Primary structure, differences in relation to the cytosolic enzyme, and functional correlations." Eur. J. Biochem. 153 (1): 13-28. 2.Chao YC, Liou SR, Tsai SF, Yin SJ (1994). "Dominance of the mutant ALDH2(2) allele in the expression of human stomach aldehyde dehydrogenase-2 activity.". Proc. Natl. Sci. Counc. Repub. China B 17 (3): 98-102.
2. Seitz HK, Meier P (2007). "The role of acetaldehyde in upper digestive tract cancer in alcoholics.". Translational research : the journal of laboratory and clinical medicine 149 (6): 293-7.