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ALDH2 Antibody

Purified Mouse Monoclonal Antibody (Mab)
Catalog # AP52793

Product Information

Application	WB
Primary Accession	P05091
Reactivity	Human, Mouse
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1
Calculated MW	56381

Additional Information

Gene ID	217
Other Names	Acetaldehyde dehydrogenase 2;Aldehyde dehydrogenase 2 family (mitochondrial);Aldehyde dehydrogenase 2 family;Aldehyde dehydrogenase mitochondrial;Aldehyde dehydrogenase, mitochondrial;ALDH 2;ALDH class 2;ALDH E2;ALDH-E2;Aldh2;ALDH2_HUMAN;ALDHI;ALDM;Liver mitochondrial ALDH;MGC1806;Mitochondrial aldehyde dehydrogenase 2;MS767;Nucleus encoded mitochondrial aldehyde dehydrogenase 2.
Dilution	WB~~1:1000
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide, pH 7.3.
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

Protein Information

Name	ALDH2 (HGNC:404)
Synonyms	ALDM
Function	Mitochondrial aldehyde dehydrogenase with broad substrate specificity which participates in the detoxification of ethanol-derived acetaldehyde and endogenous aldehydes, including those arising from lipid peroxidation (PubMed:16956664, PubMed:22339434, PubMed:33355142, PubMed:39075523). The reaction mechanism involves a nucleophilic attack on the aldehyde substrate, resulting in formation of a thiohemiacetal intermediate. Subsequent hydride transfer to NAD+, yields a thioester intermediate which is hydrolyzed to the carboxylic acid product through activation of a water molecule by the catalytic glutamate (PubMed:19506075).

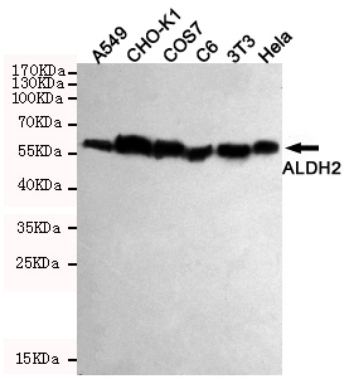
In vivo, ALDH2 is required for the clearance of formaldehyde, a cytotoxic and carcinogenic endogenous metabolite that induces DNA damage (PubMed:33355142). It also catalyzes the oxidation of 3,4-dihydroxyphenylacetaldehyde (DOPAL), a reactive intermediate of dopamine catabolism, to 3,4-dihydroxyphenylacetate (DOPAC) (PubMed:16956664). ALDH2 may also catalyze the oxidation of 4-aminobutanal (gamma-aminobutyraldehyde) to 4-aminobutanoate (GABA), representing an alternative route for GABA biosynthesis from polyamine catabolism (By similarity). In vitro, ALDH2 catalyzes the oxidation of acrolein, malondialdehyde, and 4-hydroxynonenal (4-HNE) (PubMed:22339434). It also exhibits esterase activity that is enhanced by NAD+ but does not require it, although the physiological relevance of this activity remains unclear (PubMed:19506075).

Cellular Location Mitochondrion

References

Braun T.,et al.FEBS Lett. 215:233-236(1987).
Braun T.,et al.FEBS Lett. 233:440-440(1988).
Braun T.,et al.Nucleic Acids Res. 15:3179-3179(1987).
Hsu L.C.,et al.Genomics 2:57-65(1988).
Lassen N.,et al.Submitted (MAY-2004) to the EMBL/GenBank/DDBJ databases.

Images



Western blot detection of ALDH2 in Hela,3T3,C6,COS7,CHO-K1 and A549 cell lysates using ALDH2 mouse mAb (1:1000 diluted).Predicted band size:56KDa.Observed band size:56KDa.

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