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ALDH2 Antibody

Rabbit mAb
Catalog # AP93176

Product Information

Application	WB
Primary Accession	P05091
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Other Names	Acetaldehyde dehydrogenase 2; ALDH class 2; ALDH E2; Aldh2; ALDHI; ALDM; Liver mitochondrial ALDH; Mitochondrial aldehyde dehydrogenase 2; MS767;
Isotype	Rabbit IgG
Host	Rabbit
Calculated MW	56381

Additional Information

Dilution	WB 1:500~1:2000
Purification	Affinity-chromatography
Immunogen	A synthesized peptide derived from human ALDH2
Description	Required for clearance of cellular formaldehyde, a cytotoxic and carcinogenic metabolite that induces DNA damage.
Storage Condition and Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.

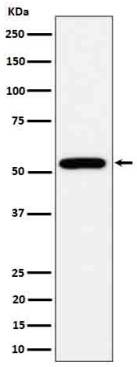
Protein Information

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

Images



Western blot analysis of ALDH2 expression in HepG2 cell lysate.

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