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# ALDH2 Rabbit mAb

Catalog # AP75049

## Product Information

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|---|---|
| **Application** | WB, IHC-P, IP |
| **Primary Accession** | P05091 |
| **Reactivity** | Rat, Human, Mouse |
| **Host** | Rabbit |
| **Clonality** | Monoclonal Antibody |
| **Isotype** | IgG |
| **Conjugate** | Unconjugated |
| **Purification** | Affinity Purified |
| **Calculated MW** | 56381 |

## Additional Information

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|---|---|
| **Gene ID** | 217 |
| **Other Names** | ALDH2 |
| **Dilution** | WB~~1:1000-1:5000 IHC-P~~N/A IP~~1:10-1:100 |
| **Format** | Liquid in 50mM Tris-Glycine(pH 7.4), 0.15M NaCl, 40%Glycerol, 0.01% sodium azide and 0.05% BSA. |
| **Storage** | Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles. |

## Protein Information

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|---|---|
| **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 |

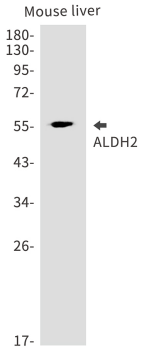
dopamine catabolism, to 3,4-dihydroxyphenylacetate (DOPAC) (PubMed:16956664). ALDH2 may also catalyze the oxidation of 4-aminobutanal (gamma-aminobutyraldehyde) to 4-aminobutanoate (GABA), representing an alternative route for GABA biosynthesis from polyamine catabolism (By similarity). In vitro, ALDH2 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

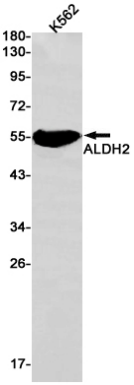
## Background

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

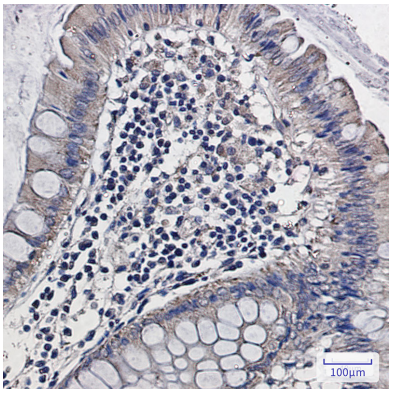
## Images




Western blot analysis of ALDH2 in mouse liver lysates using ALDH2 antibody.




Western blot analysis of ALDH2 in K562 lysates using ALDH2 antibody.




Immunohistochemistry analysis of paraffin-embedded Human colon cancer using ALDH2 antibody. High-pressure and temperature Sodium Citrate pH 6.0 was used for antigen retrieval.

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