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# Anti-ALDH1A1 Antibody

Catalog # AP60215

## Product Information

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| **Application** | WB, IHC, IF/IC |
| **Primary Accession** | P00352 |
| **Reactivity** | Human, Mouse, Rat |
| **Host** | Rabbit |
| **Clonality** | Polyclonal |
| **Calculated MW** | 54862 |

## Additional Information

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|---|---|
| **Gene ID** | 216 |
| **Other Names** | ALDC; ALDH1; PUMB1; Retinal dehydrogenase 1; RALDH 1; RalDH1; ALDH-E1; ALHDII; Aldehyde dehydrogenase family 1 member A1; Aldehyde dehydrogenase, cytosolic |
| **Target/Specificity** | KLH-conjugated synthetic peptide encompassing a sequence within the N-term region of human ALDH1A1. The exact sequence is proprietary. |
| **Dilution** | WB~~WB (1/500 - 1/1000) IHC~~1:100~500 IF/IC~~N/A |
| **Format** | Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide. |
| **Storage** | Store at -20 °C.Stable for 12 months from date of receipt |

## Protein Information

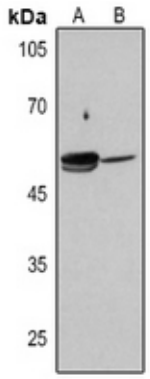
| | |
|---|---|
| **Name** | ALDH1A1 ( HGNC:402) |
| **Function** | Cytosolic dehydrogenase that catalyzes the NAD(+)-dependent irreversible oxidation of a wide range of aldehydes to their corresponding carboxylic acid (PubMed:25450233, PubMed:26373694, PubMed:22339434, PubMed:23444097). Functions downstream of retinol dehydrogenases and catalyzes the oxidation of retinaldehyde into retinoic acid, the second step in the oxidation of retinol/vitamin A into retinoic acid (PubMed:25413692). This pathway is crucial to control the levels of retinol and retinoic acid, two important molecules which excess can be teratogenic and cytotoxic (PubMed:25413692). Also oxidizes aldehydes resulting from lipid peroxidation like (E)-4-hydroxynon-2-enal/HNE, malonaldehyde and hexanal that form protein adducts and are highly cytotoxic. By participating for instance to the clearance of (E)-4-hydroxynon-2- enal/HNE in the lens epithelium prevents the formation of HNE-protein adducts and lens opacification (PubMed:12941160, PubMed:15623782, PubMed:19296407). Also functions downstream of |

fructosamine-3-kinase in the fructosamine degradation pathway by catalyzing the oxidation of 3- deoxyglucosone, the carbohydrate product of fructosamine 3-phosphate decomposition, which is itself a potent glycating agent that may react with lysine and arginine side-chains of proteins (PubMed:17175089). Also has an aminobutyraldehyde dehydrogenase activity and is probably part of an alternative pathway for the biosynthesis of GABA/4-aminobutanoate in midbrain, thereby playing a role in GABAergic synaptic transmission (By similarity).

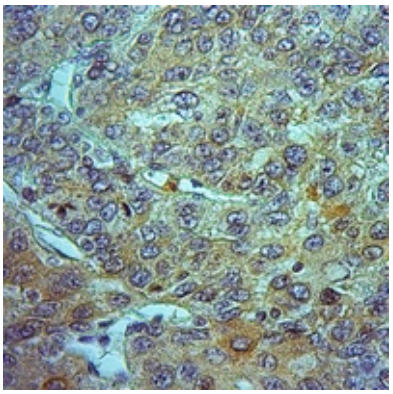
**Cellular Location** Cytoplasm, cytosol. Cell projection, axon {ECO:0000250|UniProtKB:P24549}

**Tissue Location** Expressed by erythrocytes (at protein level).

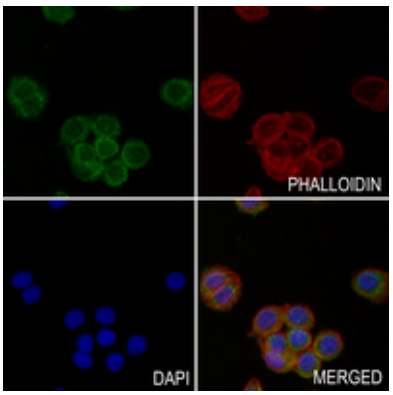
## Images




Western blot analysis of ALDH1A1 expression in mouse liver (A), rat lung (B) whole cell lysates. (Predicted band size: 54 kD; Observed band size: 55 kD)



Immunohistochemical analysis of ALDH1A1 staining in human liver cancer formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.




Immunofluorescent analysis of ALDH1A1 staining in PC9 cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 °C in a hidified chamber. Cells were washed with PBST and incubated with a AF488-conjugated secondary antibody (green) in PBS at room temperature in the dark. Phalloidin - AF594 was used to stain Actin filaments (red). DAPI was used to stain the cell nuclei (blue).

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