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ALDH1A1 Rabbit mAb

Catalog # AP74894

Product Information

Application	WB, IHC-P, FC, IP
Primary Accession	P00352
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Monoclonal Antibody
Isotype	IgG
Conjugate	Unconjugated
Purification	Affinity Purified
Calculated MW	54862

Additional Information

Gene ID	216
Other Names	ALDH1A1
Dilution	WB~~1:500-1:1000 IHC-P~~N/A FC~~1:20-1:50 IP~~1:20-1:50
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

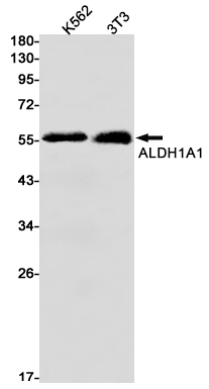
Name	ALDH1A1 (HGNC:402)
Function	Cytosolic dehydrogenase that catalyzes the irreversible oxidation of a wide range of aldehydes to their corresponding carboxylic acid (PubMed:12941160, PubMed:15623782, PubMed:17175089, PubMed:19296407, PubMed:25450233, PubMed:26373694). Functions downstream of retinol dehydrogenases and catalyzes the oxidation of retinaldehyde into retinoic acid, the second step in the oxidation of retinol/vitamin A into retinoic acid (By similarity). This pathway is crucial to control the levels of retinol and retinoic acid, two important molecules which excess can be teratogenic and cytotoxic (By similarity). 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).

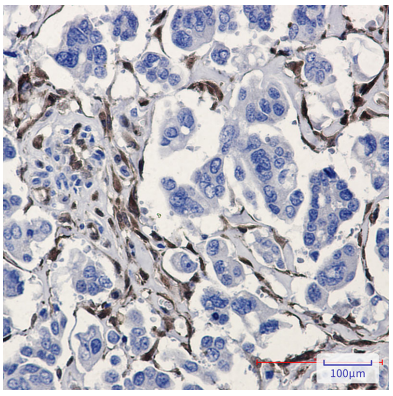
Background

ALDH1A1 is a liver cytosolic isoform of acetaldehyde dehydrogenase and is involved in the major pathway of alcohol metabolism along with alcohol dehydrogenase . ALDH1A1 is also known as retinal dehydrogenase 1 and is involved in retinol metabolism, converting retinol to retinoic acid.

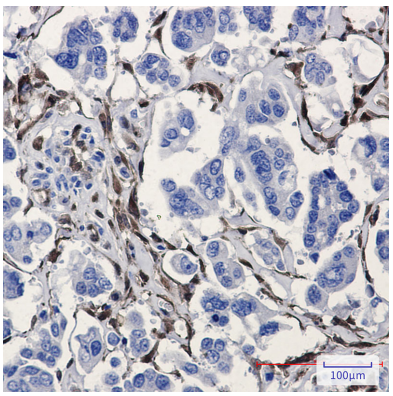
Images

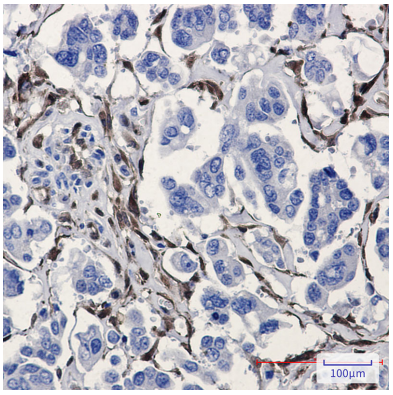


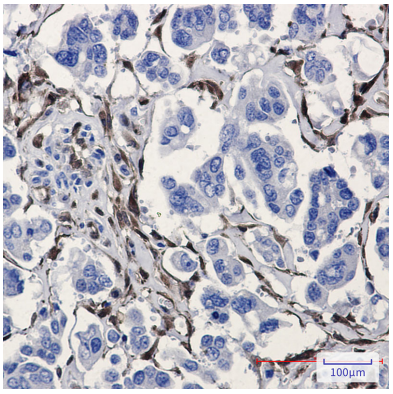
Western blot analysis of ALDH1A1 in K562, 3T3 lysates using ALDH1A1 antibody.



Immunohistochemistry analysis of paraffin-embedded Human Cholangiocarcinoma using ALDH1A1 antibody.High-pressure and temperature Sodium Citrate pH 6.0 was used for antigen retrieval.







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