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ALDH1A1 Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP1465C

Specification

ALDH1A1 Antibody (Center) - Product Information

Application	**WB, IF, IHC-P, FC,E**
Primary Accession	P00352
Other Accession	O35945, Q8HYE4
Reactivity	**Human**
Predicted	**Monkey, Mouse**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Antigen Region	**302-331**

ALDH1A1 Antibody (Center) - Additional Information

Gene ID 216

Other Names
Retinal dehydrogenase 1, RALDH 1, RalDH1, ALDH-E1, ALHDII, Aldehyde dehydrogenase family 1 member A1, Aldehyde dehydrogenase, cytosolic, ALDH1A1, ALDC, ALDH1, PUMB1

Target/Specificity
This ALDH1A1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 302-331 amino acids from the Central region of human ALDH1A1.

Dilution
WB~~1:1000
IF~~1:10~50
IHC-P~~1:10~50
FC~~1:10~50
E~~Use at an assay dependent concentration.

Format
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.

Storage
Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
ALDH1A1 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

ALDH1A1 Antibody (Center) - 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).

ALDH1A1 Antibody (Center) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

ALDH1A1 Antibody (Center) - Images

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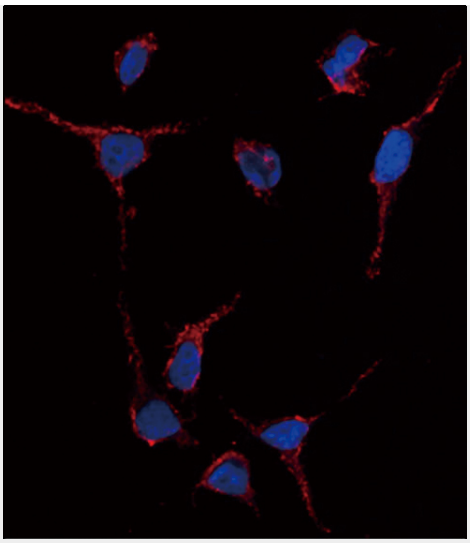
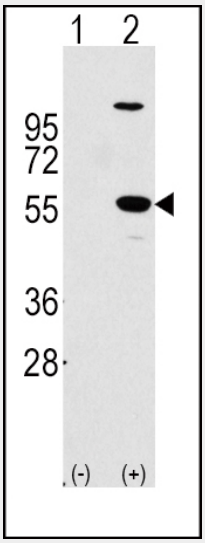


Immunofluorescence analysis of anti-ALDH1A1 Antibody (Center) in HeLa cells. 0.025 mg/ml primary antibody was followed by Alexa-Fluor-546-conjugated donkey anti-rabbit IgG (H+L). Alexa-Fluor-546 emits orange fluorescence. Blue counterstaining is DAPI.



Western blot analysis of ALDH1A1 (arrow) using rabbit polyclonal ALDH1A1 Antibody (Center) (Cat# AP1465c). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected with the ALDH1A1 gene (Lane 2) (Origene Technologies).

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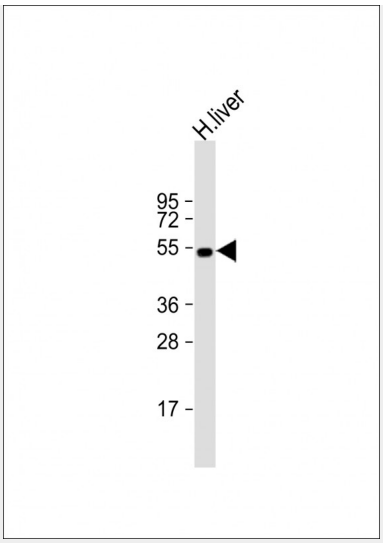
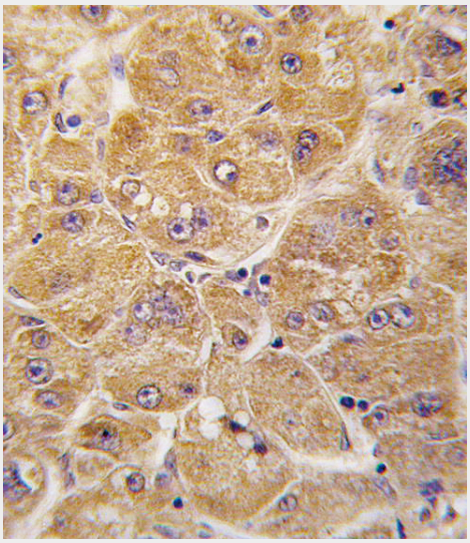


Anti-ALDH1A1 Antibody (Center) at 1:1000 dilution + human liver lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 55 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Formalin-fixed and paraffin-embedded human hepatocarcinoma tissue reacted with ALDH1A1 antibody (Center)(Cat.#AP1465c), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.

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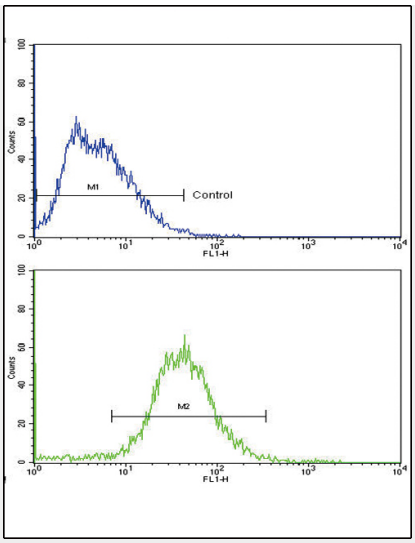

Flow cytometric analysis of HepG2 cells using ALDH1A1 Antibody (Center)(bottom histogram) compared to a negative control cell (top histogram). FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

ALDH1A1 Antibody (Center) - Background

ALDH1A1 belongs to the aldehyde dehydrogenases family of proteins. Aldehyde dehydrogenase is the second enzyme of the major oxidative pathway of alcohol metabolism. Two major liver isoforms of this enzyme, cytosolic and mitochondrial, can be distinguished by their electrophoretic mobilities, kinetic properties, and subcellular localizations. Most Caucasians have two major isozymes, while approximately 50% of Orientals have only the cytosolic isozyme, missing the mitochondrial isozyme. A remarkably higher frequency of acute alcohol intoxication among Orientals than among Caucasians could be related to the absence of the mitochondrial isozyme.

ALDH1A1 Antibody (Center) - References

Moore,S., J Stud Alcohol Drugs 68 (2), 192-196 (2007)
Collard,F., Biochimie 89 (3), 369-373 (2007)

ALDH1A1 Antibody (Center) - Citations

- N6-methyladenosine modification of B7-H3 mRNA promotes the development and progression of colorectal cancer
- A novel reporter construct for screening small molecule inhibitors that specifically target self-renewing cancer cells.
- Cargo-free nano-medicine with pH-sensitivity for co-delivery of DOX conjugated prodrug with SN38 to synergistically eradicate breast cancer stem cells.
- Ataxin-1 regulates the cerebellar bioenergetics proteome through the GSK3β-mTOR pathway which is altered in Spinocerebellar ataxia type 1 (SCA1).
- Wnt ligands from the embryonic surface ectoderm regulate \'bimetallic strip\' optic cup morphogenesis in mouse.