

ALDH1A1 Antibody (Center)
Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP20580c

Specification

ALDH1A1 Antibody (Center) - Product Information

Application	IHC-P-Leica, IF, WB,E
Primary Accession	P00352
Other Accession	Q8HYE4
Reactivity	Human, Mouse, Rat
Predicted	Monkey
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	54862

ALDH1A1 Antibody (Center) - Additional Information

Gene ID 216

Other Names

Retinal dehydrogenase 1, RALDH 1, RaIDH1, ALDH-E1, ALHDII, Aldehyde dehydrogenase family 1 member A1, Aldehyde dehydrogenase, cytosolic, ALDH1A1, ALDC, ALDH1, PUMB1

Target/Specificity

This ALDH1A1 antibody is generated from a rabbit immunized with a KLH conjugated synthetic peptide between 306-339 amino acids from the Central region of human ALDH1A1.

Dilution

IHC-P-Leica~~1:500

IF~~1:25

WB~~1:1000

E~~Use at an assay dependent concentration.

Format

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

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

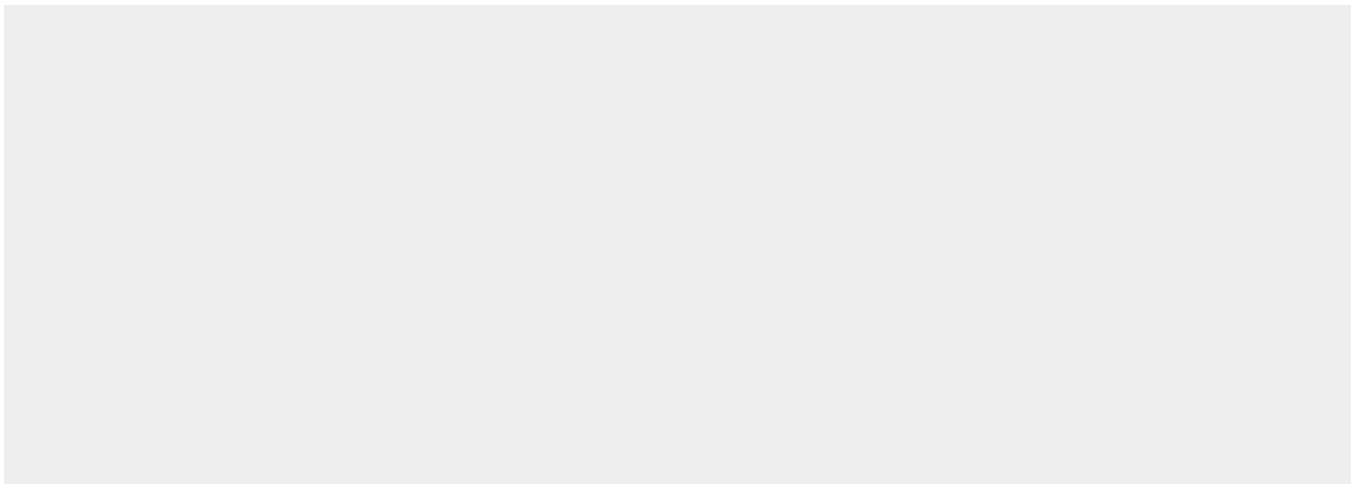
Expressed by erythrocytes (at protein level).

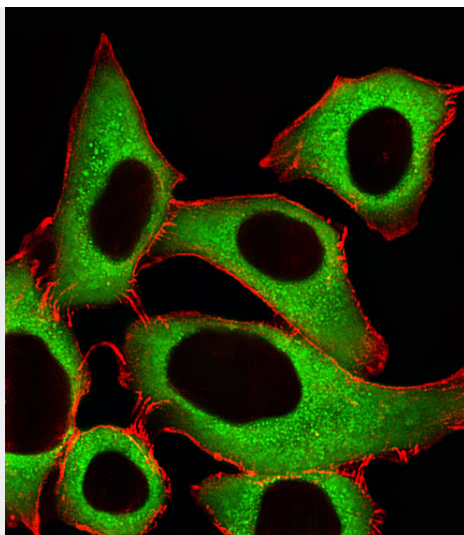
ALDH1A1 Antibody (Center) - Protocols

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

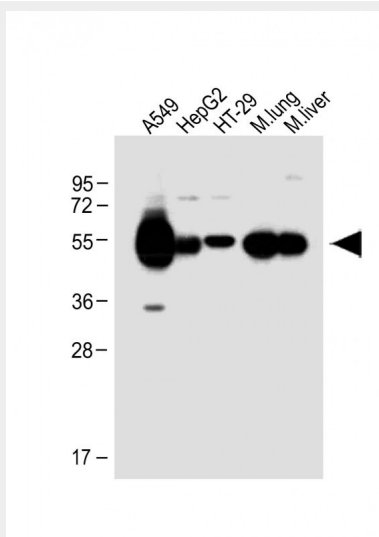
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

ALDH1A1 Antibody (Center) - Images

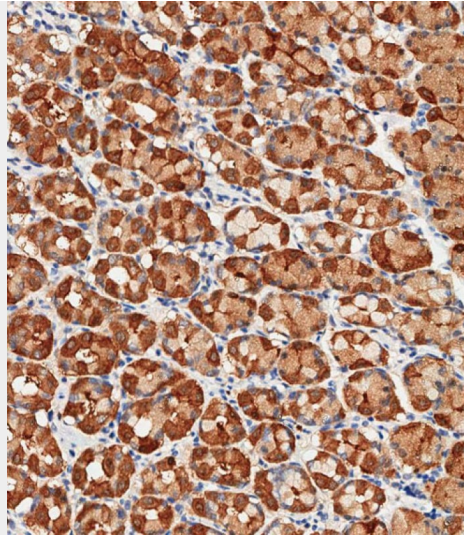




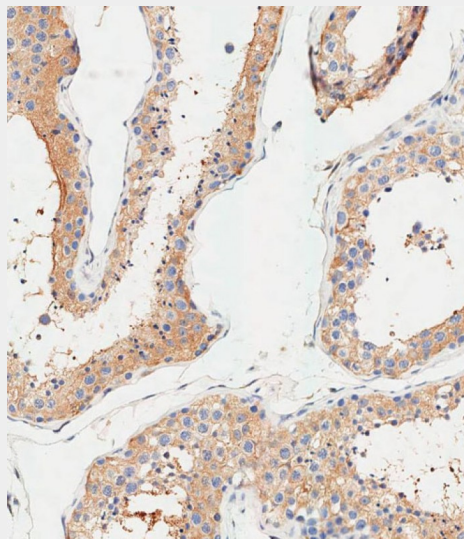
Fluorescent image of A549 cells stained with ALDH1A1 Antibody (Center)(Cat#AP20580c). AP20580c was diluted at 1:25 dilution. An Alexa Fluor 488-conjugated goat anti-rabbit IgG at 1:400 dilution was used as the secondary antibody (green). Cytoplasmic actin was counterstained with Alexa Fluor® 555 conjugated with Phalloidin (red).



All lanes : Anti-ALDH1A1 Antibody (Center) at 1:1000 dilution Lane 1: A549 whole cell lysate Lane 2: HepG2 whole cell lysate Lane 3: HT-29 whole cell lysate Lane 4: Mouse lung lysate Lane 5: Mouse 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.



Immunohistochemical analysis of paraffin-embedded Human stomach tissue using AP20580c performed on the Leica® BOND RXm. Tissue was fixed with formaldehyde at room temperature, antigen retrieval was by heat mediation with a EDTA buffer (pH9. 0). Samples were incubated with primary antibody(1:500) for 1 hours at room temperature. A undiluted biotinylated CRF Anti-Polyvalent HRP Polymer antibody was used as the secondary antibody.



Immunohistochemical analysis of paraffin-embedded Human testis tissue using AP20580c performed on the Leica® BOND RXm. Tissue was fixed with formaldehyde at room temperature, antigen retrieval was by heat mediation with a EDTA buffer (pH9. 0). Samples were incubated with primary antibody(1:500) for 1 hours at room temperature. A undiluted biotinylated CRF Anti-Polyvalent HRP Polymer antibody was used as the secondary antibody.

ALDH1A1 Antibody (Center) - Background

Binds free retinal and cellular retinol-binding protein- bound retinal. Can convert/oxidize retinaldehyde to retinoic acid (By similarity).

ALDH1A1 Antibody (Center) - References

- Hsu L.C.,et al.Genomics 5:857-865(1989).
- Zheng C.F.,et al.Alcohol. Clin. Exp. Res. 17:828-831(1993).
- Ramana K.V.,et al.Submitted (SEP-2003) to the EMBL/GenBank/DDBJ databases.

Kalnine N., et al. Submitted (MAY-2003) to the EMBL/GenBank/DDBJ databases.
Humphray S.J., et al. Nature 429:369-374(2004).