

Anti-ALDH1A1 Antibody
Catalog # ABO10986**Specification****Anti-ALDH1A1 Antibody - Product Information**

Application	WB, IHC-P
Primary Accession	P00352
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized

Description

Rabbit IgG polyclonal antibody for Retinal dehydrogenase 1(ALDH1A1) detection. Tested with WB, IHC-P in Human;Mouse;Rat.

Reconstitution

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Anti-ALDH1A1 Antibody - Additional Information

Gene ID 216

Other Names

Retinal dehydrogenase 1, RALDH 1, RaIDH1, 1.2.1.-, 1.2.1.36, Aldehyde dehydrogenase, cytosolic, ALDH1A1 (http://www.genenames.org/cgi-bin/gene_symbol_report?hgnc_id=402)

Calculated MW

54862 MW KDa

Application Details

Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, By Heat
Western blot, 0.1-0.5 µg/ml, Human, Rat, Mouse

Subcellular Localization

Cytoplasm.

Protein Name

Retinal dehydrogenase 1(RALDH 1/RaIDH1)

Contents

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na₂HPO₄, 0.05mg Thimerosal, 0.05mg NaN₃.

Immunogen

A synthetic peptide corresponding to a sequence in the middle region of human ALDH1A1(283-303aa DLDNAVEFAHHGVFYHQGCC), different from the related rat and mouse sequences by one amino acid.

Purification

Immunogen affinity purified.

Cross Reactivity

No cross reactivity with other proteins

Storage

At -20°C for one year. After r°Constitution, at 4°C for one month. It°Can also be aliquotted and stored frozen at -20°C for a longer time.Avoid repeated freezing and thawing.

Sequence Similarities

Belongs to the aldehyde dehydrogenase family.

Anti-ALDH1A1 Antibody - 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

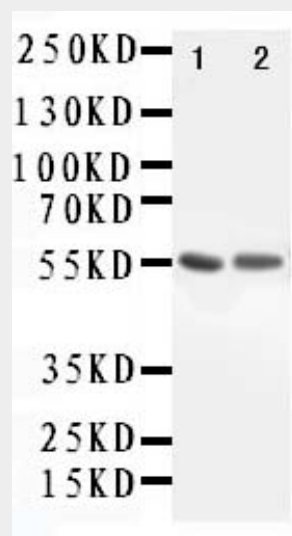
Expressed by erythrocytes (at protein level).

Anti-ALDH1A1 Antibody - Protocols

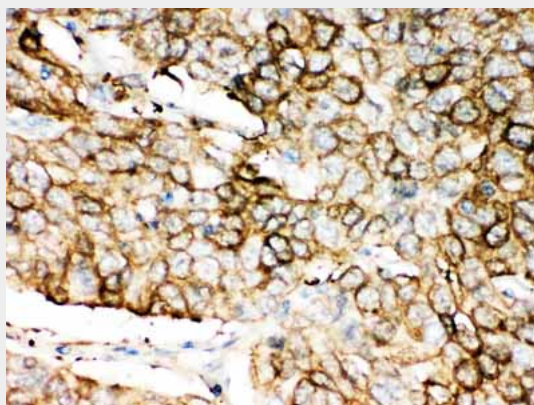
Provided below are standard protocols that you may find useful for product applications.

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

Anti-ALDH1A1 Antibody - Images



Anti-ALDH1A1 antibody, ABO10986, Western blotting Lane 1: Rat Lung Tissue Lysate Lane 2: COLO320 Cell Lysate



Anti-ALDH1A1 antibody, ABO10986, IHC(P) IHC(P): Human Lung Cancer Tissue

Anti-ALDH1A1 Antibody - Background

ALDH1A1 (Aldehyde dehydrogenase 1 family, member A1), also called ALDH1, RALDH1 or ALDH, LIVER CYTOSOLIC, is an enzyme that in humans is encoded by the ALDH1A1 gene. And this protein belongs to the aldehyde dehydrogenases family of proteins. The ALDH1A1 gene is mapped on 9q21.13. ALDH1A1 also belongs to the group of corneal crystallins that help maintain the transparency of the cornea. ALDH1A1 is associated with a low K_m for NAD, a high K_m for acetaldehyde, and is strongly inactivated by disulfiram. The ALDH1 gene is about 53 kb long and is divided into 13 exons. Retinaldehyde is generated by ADH1 from retinol, and its concentration is determined in large part by its subsequent catabolism by RALDH1 to retinoic acid.