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Anti-ALDH1A1 Antibody

Catalog # ABO10986

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.

Additional Information

Gene ID	216
Other Names	Retinal dehydrogenase 1, RALDH 1, RalDH1, 1.2.1.-, 1.2.1.36, Aldehyde dehydrogenase, cytosolic, ALDH1A1 (HGNC:402)
Calculated MW	54862
Application Details	Immunohistochemistry(Paraffin-embedded Section), 0.5-1 □g/ml, Human, By Heat Western blot, 0.1-0.5 □g/ml, Human, Rat, Mouse
Subcellular Localization	Cytoplasm.
Source	Eukaryota
Protein Name	Retinal dehydrogenase 1(RALDH 1/RalDH1)
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 DLDNAVEFAHHGVFYHQGQCC), 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.

Protein Information

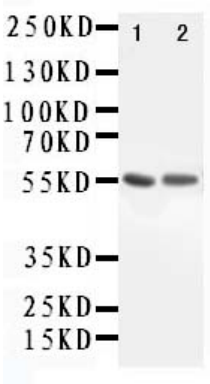
Name	ALDH1A1 (HGNC:402)
Function	Cytosolic dehydrogenase that catalyzes the NAD(+)-dependent irreversible oxidation of a wide range of aldehydes to their corresponding carboxylic acid (PubMed:25450233, PubMed:26373694, PubMed:22339434, PubMed:23444097). Functions downstream of retinol dehydrogenases 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).

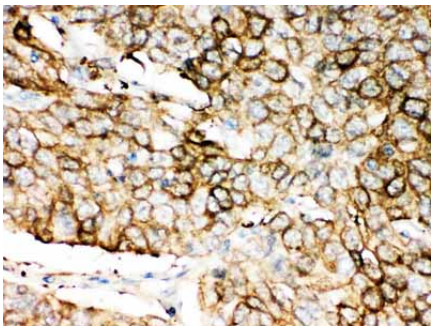
Background

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 Km for NAD, a high Km 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.

Images

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





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

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