

**ALDH1A1 Antibody (N-term) Blocking Peptide**  
**Synthetic peptide**  
**Catalog # BP1445a****Specification**

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**ALDH1A1 Antibody (N-term) Blocking Peptide - Product Information**Primary Accession [P00352](#)**ALDH1A1 Antibody (N-term) Blocking Peptide - 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**

The synthetic peptide sequence used to generate the antibody [AP1445a](/product/products/AP1445a) was selected from the N-term region of human ALDH1A1. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

**Format**

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

**Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

**Precautions**

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

**ALDH1A1 Antibody (N-term) Blocking Peptide - 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: [19296407](http://www.uniprot.org/citations/19296407), PubMed: [12941160](http://www.uniprot.org/citations/12941160), PubMed: [15623782](http://www.uniprot.org/citations/15623782), PubMed: [17175089](http://www.uniprot.org/citations/17175089), PubMed: [26373694](http://www.uniprot.org/citations/26373694), PubMed: [25450233](http://www.uniprot.org/citations/25450233)). 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:<a href="http://www.uniprot.org/citations/19296407" target="\_blank">19296407</a>, PubMed:<a href="http://www.uniprot.org/citations/12941160" target="\_blank">12941160</a>, PubMed:<a href="http://www.uniprot.org/citations/15623782" target="\_blank">15623782</a>). Functions also 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:<a href="http://www.uniprot.org/citations/17175089" target="\_blank">17175089</a>). Has also 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 (N-term) Blocking Peptide - Protocols**

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

- [Blocking Peptides](#)

**ALDH1A1 Antibody (N-term) Blocking Peptide - Images****ALDH1A1 Antibody (N-term) Blocking Peptide - Background**

This protein 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 is a cytosolic isoform, which has a high affinity for aldehydes.