

ALDH1A1 Blocking Peptide (Center)
Synthetic peptide
Catalog # BP20580c**Specification**

ALDH1A1 Blocking Peptide (Center) - Product Information

Primary Accession [P00352](#)
Other Accession [Q8HYE4](#)

ALDH1A1 Blocking Peptide (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

The synthetic peptide sequence is selected from aa 326-339 of HUMAN ALDH1A1

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 Blocking Peptide (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 Blocking Peptide (Center) - Protocols

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

- [Blocking Peptides](#)

ALDH1A1 Blocking Peptide (Center) - Images**ALDH1A1 Blocking Peptide (Center) - Background**

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

ALDH1A1 Blocking Peptide (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.
Kalnina N.,et al.Submitted (MAY-2003) to the EMBL/GenBank/DDBJ databases.
Humphray S.J.,et al.Nature 429:369-374(2004).