

Recombinant Human ALDH1A1 Protein (M1-S501), His tagged

Cat. No. ALDH1A1-0342H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Human 6His-TEV-RALDH1(M1-S501 end) (N121S) Protein was expressed in E. coli.
Species	Human
Source	E.coli
ProteinLength	M1-S501
Description	Cytosolic dehydrogenase that catalyzes the irreversible oxidation of a wide range of aldehydes to their corresponding carboxylic acid. 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. This pathway is crucial to control the levels of retinol and retinoic acid, two important molecules which excess can be teratogenic and cytotoxic. 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. 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 glycation agent that may react with lysine and arginine side-chains of proteins. Has also an aminobutyraldehyde dehydrogenase activity and is probably part of an alternative pathway for the

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	biosynthesis of GABA/4-aminobutanoate in midbrain, thereby playing a role in GABAergic synaptic transmission.
Form	Liquid
Endotoxin	< 0.01 EU per µg of the protein
Purity	90%
Stability	Samples are stable for up to twelve months from date of receipt at -20 to -80 centigrade.
Storage	Store it under sterile conditions at -20 to -80 centigrade. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Storage Buffer	Supplied as sterile 50 mM Tris-HCl (pH7.5), 200 mM NaCl, 20% glycerol
Shipping	It is shipped out with blue ice.

GENE INFORMATION

Gene Name	ALDH1A1 aldehyde dehydrogenase 1 family, member A1 [Homo sapiens (human)]
Official Symbol	ALDH1A1
Synonyms	ALDH1A1; aldehyde dehydrogenase 1 family, member A1; ALDH1, PUMB1; retinal dehydrogenase 1; RALDH1; retinaldehyde dehydrogenase 1; ALHDII; RALDH 1; ALDH class 1; acetaldehyde dehydrogenase 1; aldehyde dehydrogenase 1, soluble; aldehyde dehydrogenase, liver cytosolic; ALDC; ALDH1; PUMB1; ALDH11; ALDH-E1; MGC2318;

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Gene ID	216
mRNA Refseq	NM_000689
Protein Refseq	NP_000680
MIM	100640
UniProt ID	P00352

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