

Product datasheet for **SC321987**

ALDH7A1 (NM_001182) Human Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	ALDH7A1 (NM_001182) Human Untagged Clone
Tag:	Tag Free
Symbol:	ALDH7A1
Synonyms:	ATQ1; EPD; PDE
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC (PS100020)
E. coli Selection:	Ampicillin (100 ug/mL)



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Fully Sequenced ORF: >OriGene sequence for SC321987
 TCGCGCGCTGTGTGTGCACGCTGCAAAGACCAGCAAGCTCTCTGGACCTTGGAGCAGGCC
 TGCCGCGCTTCATGTCCACTCTCCTCATCAATCAGCCCCAGTATGCGTGGCTGAAAGAGCT
 GGGGCTCCGCGAGGAAAACGAGGGCGTGTATAATGGAAGCTGGGAGGCCGGGGAGAGGT
 TATTACGACCTATTGCCCTGCTAACACGAGCCAATAGCAAGAGTCCGACAGGCCAGTGT
 GGCAGACTATGAAGAACTGTAAGAAAAGCAAGAGAAGCATGAAAAATCTGGGCAGATAT
 TCCTGCTCCAAAACGAGGAGAAAATAGTAAGACAGATTGGCGATGCCTTGCGGGAGAAGAT
 CCAAGTACTAGGAAGCTTGGTGTCTTTGGAGATGGGGAAAATCTTAGTGAAGGTGTGG
 TGAAGTTCAGGAGTATGTGGATATCTGTGACTATGCTGTTGGTTTATCAAGGATGATTGG
 AGGACCTATCTTGCCTTCTGAAAGATCTGGCCATGCACTGATTGAGCAGTGAATCCCGT
 AGGCTCGTTGGAATCATCACGGCATTCAATTTCCCTGTGGCAGTGTATGGTTGGAACAA
 CGCCATCGCCATGATCTGTGAAATGTCTGCCTCTGAAAGGAGCTCAACCACTTCCCT
 CATTAGTGTGGTGTACAAAGATAATAGCCAAGGTTCTGGAGGACAACAAGCTGCCTGG
 TGCAATTTGTTCCCTTGACTTGTGGTGGAGCAGATATTGGCACAGCAATGGCCAAAGATGA
 ACGAGTGAACCTGCTGTCTTCACTGGGAGCACTCAGGTGGGAAAACAGGTGGGCCTGAT
 GGTGCAGGAGAGGTTTGGGAGAAGTCTGTTGAACTTGGAGGAAAACAATGCCATTATTGC
 CTTTGAAGATGCAGACCTCAGCTTAGTTGTTCCATCAGCTCTCTTCGCTGCTGTGGGAAC
 AGCTGGCCAGAGGTGTACCACTGCGAGGCGACTGTTTATACATGAAAGCATCCATGATGA
 GGTTGTAACAGACTTAAAAAGGCTATGCACAGATCCGAGTTGGGAACCCATGGGACCC
 TAATGTTCTCTATGGGCCACTCCACACCAAGCAGGCAGTGAAGCATGTTTCTTGGAGCAGT
 GGAAGAAGCAAAGAAAGAAGGTGGCACAGTGGTCTATGGGGCAAGGTTATGGATCGCCC
 TGGAAATTATGTAGAACCGACAATTGTGACAGGTCTTGGCCACGATGCGTCCATTGCACA
 CACAGAGACTTTTGTCCGATTCTATGTCTTTAAATTCAAGAATGAAGAAGAGGTCTT
 TGCATGGAATAATGAAGTAAAACAGGGACTTTCAAGTAGCATCTTTACCAAAGATCTGGG
 CAGAATCTTTCGCTGGCTTGGACCTAAAGGATCAGACTGTGGCATTGTAATGTCAACAT
 TCCAACAAGTGGGGCTGAGATTGGAGGTGCCTTTGGAGGAGAAAAGCACACTGGTGGTGG
 CAGGGAGTCTGGCAGTGTGCCTGGAAACAGTACATGAGAAGGTCTACTTGTACTATCAA
 CTACAGTAAAGACCTTCCCTGGCCCAAGGAATCAAGTTTCAGTAAAGGTGTTTTAGATG
 AACATCCCTTAATTTGAGGTGTTCCAGCAGCTGTTTTTGGAGAAGACAAAGAAAATTA
 AATTTCCCTGAATAAATGCATTATTGACTGTGACAGTACTAATCCCCCTATGACCCC
 AAAGCCCTGATTAATCAAGAGATTCCTTTTTTAAAAATCAAAAATAAAATTGTTACAACA
 TAGCCATAGTTACTAAAAAAAAAAAAAAAAAAAA

Restriction Sites: Please inquire

ACCN: NM_001182

OTI Disclaimer: Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at custsupport@origene.com or by calling 301.340.3188 option 3 for pricing and delivery.

The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. [More info](#)

OTI Annotation:	This TrueClone is provided through our Custom Cloning Process that includes sub-cloning into OriGene's pCMV6 vector and full sequencing to provide a non-variant match to the expected reference without frameshifts, and is delivered as lyophilized plasmid DNA.
Components:	The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).
Reconstitution Method:	<ol style="list-style-type: none">1. Centrifuge at 5,000xg for 5min.2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.3. Close the tube and incubate for 10 minutes at room temperature.4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.
RefSeq:	NM_001182.2 , NP_001173.1
RefSeq Size:	3566 bp
RefSeq ORF:	1536 bp
Locus ID:	501
UniProt ID:	P49419
Cytogenetics:	5q23.2
Domains:	aldedh
Protein Families:	Druggable Genome
Protein Pathways:	Arginine and proline metabolism, Ascorbate and aldarate metabolism, beta-Alanine metabolism, Butanoate metabolism, Fatty acid metabolism, Glycerolipid metabolism, Glycolysis / Gluconeogenesis, Histidine metabolism, Limonene and pinene degradation, Lysine degradation, Metabolic pathways, Propanoate metabolism, Pyruvate metabolism, Tryptophan metabolism, Valine, leucine and isoleucine degradation

Gene Summary:

The protein encoded by this gene is a member of subfamily 7 in the aldehyde dehydrogenase gene family. These enzymes are thought to play a major role in the detoxification of aldehydes generated by alcohol metabolism and lipid peroxidation. This particular member has homology to a previously described protein from the green garden pea, the 26g pea turgor protein. It is also involved in lysine catabolism that is known to occur in the mitochondrial matrix. Recent reports show that this protein is found both in the cytosol and the mitochondria, and the two forms likely arise from the use of alternative translation initiation sites. An additional variant encoding a different isoform has also been found for this gene. Mutations in this gene are associated with pyridoxine-dependent epilepsy. Several related pseudogenes have also been identified. [provided by RefSeq, Jan 2011]

Transcript Variant: This variant (1) encodes two isoforms resulting from the use of alternative in-frame translation initiation codons. The longer isoform (1) is derived from an upstream AUG (at nt 193-195), while the shorter isoform (2) is derived from a downstream AUG (at nt 277-279). This RefSeq represents the longer isoform, which resides in the mitochondria (PMIDs: 20207735 and 19885858). **Sequence Note:** This Refseq, containing three potential in-frame translation initiation codons (all with weak Kozak signals), is annotated with a CDS starting from a downstream start codon (at nt 193-195) based on better conservation, N-terminal consistency with homologous proteins, and the presence of a transit peptide, which is essential for the localization of this isoform in the mitochondria (PMIDs: 20207735 and 19885858), and is consistent with the function of this gene in lysine catabolism (which is known to occur in the mitochondria). The use of an upstream start codon (at nt 112-114) that is present in only a subset of higher mammals, would increase the protein length by 27 aa. A shorter, soluble isoform resulting from the use of another downstream start codon (at nt 277-279) is represented in a separate RefSeq (NM_001201377.1). This RefSeq record was created from transcript and genomic sequence data to make the sequence consistent with the reference genome assembly. The extent of this transcript is supported by transcript alignments.