

Product datasheet for **RC220893**

ALDH4A1 (NM_003748) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	ALDH4A1 (NM_003748) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	ALDH4A1
Synonyms:	ALDH4; P5CD; P5CDh
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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ORF Nucleotide Sequence:

>RC220893 ORF sequence
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGCATCGCC**

ATGCTGCTGCCGGCGCCCGCTCCGCCGCGCCCTGCTGTCCCGCCCTGGACCGGGGCCGCGCTGCGGT
 GGAAGCACACCTCCTCCCTGAAGGTGGCCAACGAGCCCGTCTTAGCCTTACGCAGGGCAGCCCTGAGCG
 AGATGCCCTGCAAAAGGCCTTGAAGGACCTGAAGGGCCGATGGAAGCCATCCCATGCGTGGTGGGGAT
 GAGGAGGTGTGGACGTCGGACGTGCAGTACCAAGTGTGCGCTTTTAACCATGGACATAAGGTGGCCAAGT
 TCTGTTATGCAGACAAGAGCCTGCTCAACAAAGCCATTGAGGCTGCCCTGGCTGCCCGAAAAGAGTGGGA
 CCTGAAGCCTATTGCAGACCGGGCCAGATCTTCTGAAGGGCGGACAGATGCTGAGTGGCCGCGCAGG
 GCTGAGATCCTCGCAAGACCATGGTGGACAGGGTAAGACCGTGATCCAAGCGGAGATTGACGCTGCAG
 CGGAACTCATCGACTTCTCCGGTTCAATGCCAAGTATGCGGTGGAGCTGGAGGGCAGCAGCCCATCAG
 CGTGCCCCGAGCACCAACAGCACGGTGTACCGGGTCTGGAGGGCTTCTGGCGCCATCTCGCCCTTT
 AACTTCACTGCAATCGGGCGCAACTGGCGGGGACCGCCCTGATGGGCAACGTGGTCCATATGGAAGC
 CCAGTGACACTGCCATGCTGGCCAGTATGCTGTCTACCGCATCCTTCGGGAGGCTGGCCTGCCCCCAA
 CATCATCCAGTTTGTGCCAGTGTGGCCCTATTTGGGGACTGTACCAGCTCAGAGCACCTCTGT
 GGCATCAACTTACAGGCAGTGTGCCACCTTCAAACACCTGTGGAAGCAGGTGGCCAGAACCTGGACC
 GGTTCACACCTTCCCACGCCTGGCTGGAGAGTGGCGGAAAGAAGTCCACTTCGTGCACCGCTCGGC
 CGACGTGGAGAGCGTGGTGGAGCGGACCTCCGCTCAGCCTTCGAGTACGGTGGCCAGAAGTGTCCGCG
 TGCTCGCGTCTCTACGTCCGCACTCGCTGTGGCCGAGATCAAAGGGCGGCTGCTGGAGGAGCACAGT
 GGATCAAAGTGGGCGACCTGCAGAGGATTTTGGGACTTCTTCTGCAAGTATTGATGCCAAGTCTTT
 TGCCCGTATCAAGAAGTGGCTGGAGCACGACGCTCCTCACCCAGCCTCACCATCCTGGCCGGGGCAAG
 TGTGATGACTCCGTGGGCTACTTTGTGGAGCCCTGCATCGTGGAGAGCAAGGACCCTCAGGAGCCATCA
 TGAAGGAGGAGATCTTCGGGCTGTACTGTCTGTACGTCTACCCGGATGACAAGTACAAGGAGACGCT
 GCAGCTGGTTGACAGCACCACGCTATGGCCTCACGGGGCAGTGTCTCCAGGATAAGGACGTCGTG
 CAGGAGGCCACAAAGGTGCTGAGGAATGCTGCCGGCACTTCTACATCAACGACAAGTCCACTGGCTCGA
 TAGTGGGCCAGCAGCCCTTTGGGGGGCCGAGCCTCTGGAACCAATGACAAGCCAGGGGGCCACACTA
 CATCCTGCGCTGGACGTCGCCGAGTGCATCAAGGAGACATAAGCCCTGGGGACTGGAGCTACGCG
 TACATGCAG

AG**CGGACCG**ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC
 TGGATTACAAGGATGACGACGATAAGGTTAA

Protein Sequence:

>RC220893 protein sequence
 Red=Cloning site Green=Tags(s)

MLLPAPALRRALLSRPWTGAGLRWKHTSSLKVANEPVLAFTQGS PERDALQKALKDLKGRMEAIPC VVGD
 EEVWTS DVQYQVSPFNHGHK VAKFCYADKSLLNKAIEAALAARKEWDLKPIADRAQIFLKAADMLSGPRR
 AEILAKTMVGGQKTVIQAEIDAAEELIDFFRFNAKYAVELEGQQPISVPPSTNSTVYRGLG FVA AISPF
 NFTAIGGNLAGAPALMGNVVLWKPSDTAMLASYAVYRILREAGLPPNIIQFV PADGPLFGDVTVSSEHLC
 GINFTGSVPTFKHLWKQVAQNDRFHTFPRLAGECGGNFHFVHRSADVESVVSGLRS AF EYGGQKCSA
 CSRLYVPHSLWPQIKGRLL EHSRIKVGDP AEDFGTFFSAVIDAKSFARIKKWLEHARSSPSL TILAGGK
 CDDSVGYFVEPCIVE SKDPQEPIMKEEIFGPVLSVYVYPDDKYK ETLQLVDSTTSYGLTGAVFSQDKD VV
 QEATKVL RNAAGNFYINDKSTGSIVGQQPF GGARASGTNDKPGPHYILRWTSPQVIKETHKPLGDWSYA
 YMQ

SGP**TRTRPLEQKLI SEEDLAANDILDYKDDDDKV**

Chromatograms:

https://cdn.origene.com/chromatograms/mk6618_c09.zip

Restriction Sites:

Sgfl-RsrII

Cloning Scheme:


ACCN: NM_003748

ORF Size: 1689 bp

OTI Disclaimer: 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 clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

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:**
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_003748.4](#)

RefSeq Size: 3399 bp

RefSeq ORF: 1692 bp

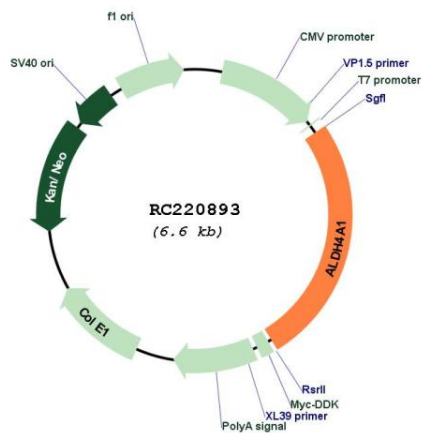
Locus ID: 8659

UniProt ID: [P30038](#)

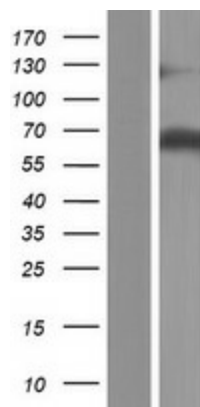
Cytogenetics: 1p36.13

Domains:	aldedh
Protein Families:	Druggable Genome
Protein Pathways:	Alanine, aspartate and glutamate metabolism, Arginine and proline metabolism, Metabolic pathways
MW:	61.7 kDa
Gene Summary:	This protein belongs to the aldehyde dehydrogenase family of proteins. This enzyme is a mitochondrial matrix NAD-dependent dehydrogenase which catalyzes the second step of the proline degradation pathway, converting pyrroline-5-carboxylate to glutamate. Deficiency of this enzyme is associated with type II hyperprolinemia, an autosomal recessive disorder characterized by accumulation of delta-1-pyrroline-5-carboxylate (P5C) and proline. Alternatively spliced transcript variants encoding different isoforms have been identified for this gene. [provided by RefSeq, Jun 2009]

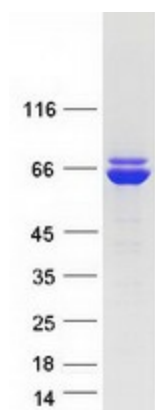
Product images:



Circular map for RC220893



Western blot validation of overexpression lysate (Cat# [LY418458]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC220893 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified ALDH4A1 protein (Cat# [TP320893]). The protein was produced from HEK293T cells transfected with ALDH4A1 cDNA clone (Cat# RC220893) using MegaTran 2.0 (Cat# [TT210002]).