

## Product datasheet for **RG220893**

### ALDH4A1 (NM\_003748) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	ALDH4A1 (NM_003748) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	ALDH4A1
Synonyms:	ALDH4; P5CD; P5CDh
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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**ORF Nucleotide Sequence:**

>RG220893 representing NM\_003748  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGCATCGCC**

ATGCTGCTGCCGGCGCCCGCTCCGCCGCGCCCTGCTGTCCCGCCCTGGACCGGGCCGCGCTGCGGT  
 GGAAGCACACCTCTCCCTGAAGGTGGCCAACGAGCCCGTCTTAGCCTTACGCAGGGCAGCCCTGAGCG  
 AGATGCCCTGCAAAGGCCTTGAAGGACCTGAAGGGCCGATGGAAGCCATCCCATGCGTGGTGGGGAT  
 GAGGAGGTGTGGACGTCCGACGTGCAGTACCAAGTGTGCGCTTTTAACCATGGACATAAGGTGGCCAAGT  
 TCTGTTATGCAGACAAGAGCCTGCTCAACAAAGCCATTGAGGCTGCCCTGGCTGCCCGAAAAGAGTGGGA  
 CCTGAAGCCTATTGCAGACCGGGCCAGATCTTCTGAAGGGCGCAGACATGCTGAGTGGCCGCGCAGG  
 GCTGAGATCTCGCCAAGACCATGGTGGACAGGGTAAGACCGTGATCCAAGCGGAGATTGACGCTGCAG  
 CGGAACTCATCGACTTCTCCGGTTCAATGCCAAGTATGCGGTGGAGCTGGAGGGCAGCAGCCCATCAG  
 CGTGCCCCGAGCACCAACAGCACGGTGTACCGGGTCTGGAGGGCTTCGTGGCGCCATCTCGCCCTTT  
 AACTTCACTGCAATCGGGCGCAACCTGGCGGGGACCGCCCTGATGGGCAACGTGGTCCATGGAAGC  
 CCAGTGACACTGCCATGCTGGCCAGCTATGCTGTCTACCGCATCCTTCGGGAGGCTGGCCTGCCCCCAA  
 CATCATCCAGTTTGTGCCAGCTGATGGGCCCTATTTGGGGACTGTACCAGCTCAGAGCACCTCTGT  
 GGCATCAACTTCACAGGCAGTGTGCCACCTTCAAACACCTGTGGAAGCAGGTGGCCAGAACCTGGACC  
 GGTTCACACCTTCCCACGCCTGGCTGGAGAGTGGCGGAAAGAAGTCCACTTCGTGCACCGCTCGGC  
 CGAGTGGAGAGCGTGGTGGAGCGGACCTCCGCTCAGCCTTCGAGTACGGTGGCCAGAAGTGTCCGCC  
 TGCTCGCGTCTCTACGTCCGCACTCGCTGTGGCCGAGATCAAAGGGCGGCTGCTGGAGGACACAGTC  
 GGATCAAAGTGGGCGACCCTGCAGAGGATTTTGGGACTTCTTCTGTCAGTGATTGATGCCAAGTCTTT  
 TGCCCGTATCAAGAAGTGGCTGGAGCACGCGCGCTCCTCGCCAGCCTCACCATCCTGGCTGGGGGCAAG  
 TGTGATGACTCCGTGGGCTACTTTGTGGAGCCCTGCATCGTGGAGAGCAAGGACCCTCAGGAGCCCATCA  
 TGAAGGAGGAGATCTTCGGGCTGTACTGTCTGTACGTCTACCGGACGACAAGTACAAGGAGACGCT  
 GCAGCTGGTTGACAGCACCACAGCTATGGCCTCACGGGGCAGTGTCTCCAGGATAAGGACGTCGTG  
 CAGGAGGCCACAAAGGTGCTGAGGAATGCTGCCGGCACTTCTACATCAACGACAAGTCCACTGGCTCGA  
 TAGTGGGCCAGCAGCCCTTTGGGGGGCCGAGCCTCTGGAACCAATGACAAGCCAGGGGGCCACACTA  
 CATCCTGCGCTGGACGTGCCCGAGTCAATCAAGGAGACATAAGCCCTGGGGACTGGAGTACGCG  
 TACATGCAG

AG**CGGACCG**ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

**Protein Sequence:**

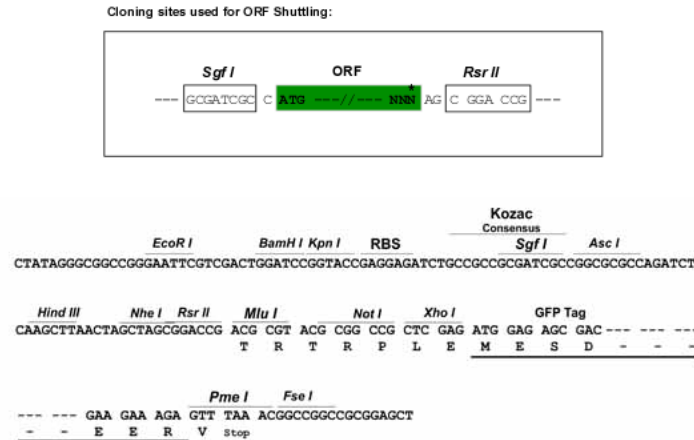
>RG220893 representing NM\_003748  
 Red=Cloning site Green=Tags(s)

MLLPAPALRRALLSRPWTGAGLRWKHTSSLKVANEPVLAFTQGS PERDALQKALKDLKGRMEAI PCVVD  
 EEVWTSVQYQVSPFNHGHKVAFCYADKSLNKAIEAALAARKEWDLKPIADRAQIFLKAADMLSGPRR  
 AEILAKTMVGQKTVIQAEIDAAEELIDFFRFNAKYAVELEGQPI SVPPSTNSTVYRGLG FVAAISPF  
 NFTAIGGNLAGAPALMGNVVLWKPSDTAMLASYAVYRILREAGLPPNIIQFVPADGPLFGDVTVSSEHLC  
 GINFTGSVPTFKHLWKQVAQNLD RHFTHPRLAGECGGNFHFVHRSADVSVSGTLRS AFYEGGQKCSA  
 CSRLYVPHSLWPQIKGRLL EHSRIKVGDP AEDFGTFFSAVIDAKSFARIKKWL EHARSSPSLTILAGGK  
 CDDSVGYFVEPCIVESKDPQEPIMKEEIFGPVLSVYVYPPDKYKETLQLVDSTTSYGLTGAVFSQDKD VV  
 QEATKVL RNAAGNFYINDKSTGSIVGQPPFGGARASGTNDKPGPHYILRWTSPQVIKETHKPLGDWSYA  
 YMQ

SGP**TRRRLE** - GFP Tag - V

**Restriction Sites:**

SgfI-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\\_003748.2](#), [NP\\_003739.2](#)

**RefSeq Size:** 3160 bp

**RefSeq ORF:** 1692 bp

**Locus ID:** 8659

**UniProt ID:** [P30038](#)

**Cytogenetics:** 1p36.13

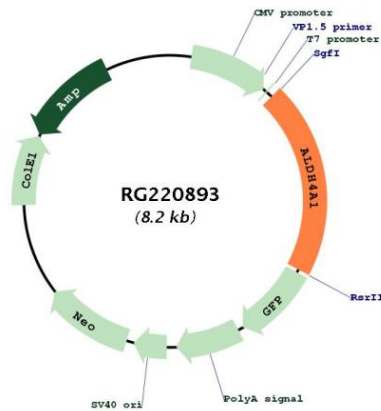
**Domains:** aldedh

**Protein Families:** Druggable Genome

**Protein Pathways:** Alanine, aspartate and glutamate metabolism, Arginine and proline metabolism, Metabolic pathways

**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 RG220893