

Product datasheet for **RG228933**

ALDH4A1 (NM_001161504) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	ALDH4A1 (NM_001161504) 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:

>RG228933 representing NM_001161504
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGCATCGCC**

ATGCTGCTGCCGGCGCCCGCTCCGCCGCGCCCTGCTGTCCCGCCCTGGACCGGGCCGCGCTGCGGT
 GGAAGCACACCTCCTCCCTGAAGGTGGCCAACGAGCCCGTCTTAGCCTTACGCAGGGCAGCCCTGAGCG
 AGATGCCCTGCAAAGGCCTTGAAGGACCTGAAGGGCCGATGGAAGCCATCCCATGCGTGGTGGGGAT
 GAGGAGGTGTGGACGTGGACGTGCAGTACCAAGTGTGCGCTTTTAACCATGGACATAAGGTGGCCAAGT
 TCTGTTATGCAGACAAGAGCCTGCTCAACAAAGCCATTGAGGCTGCCCTGGCTGCCCGAAAGAGTGGGA
 CCTGAAGCCTATTGCAGACCGGGCCAGATCTTCTGAAGGGCGCAGACATGCTGAGTGGCCGCGCAGG
 GCTGAGATCCTCGCAAGACCATGGTGGACAGGGTAAGACCGTGATCCAAGCGGAGATTGACGCTGCAG
 CGGAACTCATCGACTTCTCCGGTTCAATGCCAAGTATGCGGTGGAGCTGGAGGGCAGCAGCCCATCAG
 CGTGCCCCGAGCACCAACAGCACGGTGTACCGGGTCTGGAGGGCTTCGTGGCGCCATCTCGCCCTTT
 AACTTCACTGCAATCGGGCGCAACCTGGCGGGGACCGCCCTGATGGGCAACGTGGTCCATGGAAGC
 CCAAGTGAAGTGCATGCTGGCCAGCTATGCTGTCTACCGCATCCTTCGGGAGGCTGGCCTGCCCCCAA
 CATCATCCAGTTTGTGCCAGCTGATGGGCCCTATTTGGGGACTGTACCAGCTCAGAGCACCTCTGT
 GGCATCAACTTCACAGGCAGTGTGCCACCTTCAAACACCTGTGGAAGCAGGTGGCCAGAACCTGGACC
 GGTTCACACCTTCCCACGCCTGGCTGGAGAGTGGCGGAAAGAAGTCCACTTCGTGCACCGCTCGGC
 CGACGTGGAGAGCGTGGTGGAGCGGACCTCCGCTCAGCCTTCGAGTACGGTGGCCAGAAGTGTCCGCC
 TGCTCGCGTCTCTACGTCCGCACTCGCTGTGGCCGAGATCAAAGGGCGGCTGCTGGAGGACACAGTC
 GGATCAAAGTGGGCGACCTGCAGAGGATTTGGGACCTTCTTCTGTCAGTGATTGATGCCAAGTCTTT
 TGCCCGTATCAAGAAGTGGCTGGAGACGACGCTCCTCACCCAGCCTCACCATCCTGGCCGGGGCAAG
 TGTGATGACTCCGTGGGCTACTTTGTGGAGCCCTGCATCGTGGAGAGCAAGGACCCTCAGGAGCCCATCA
 TGAAGGAGGAGATCTTCGGGCTGTACTGTCTGTACGTCTACCGGATGACAAGTACAAGGAGACGCT
 GCAGCTGATTGACAGCACCACGCTATGGCCTCACGGGGCAGTGTCTCCAGGATAAGGACGTCGTG
 CAGGAGGCCACAAAGGTGCTGAGGAATGCTGCCGGCACTTCTACATCAACGACAAGTCCACTGGCTCGA
 TAGTGGGCCAGCAGCCCTTGGGGGGCCGAGCCTCTGGAACCAATGACAAGCCAGGGGGCCACACTA
 CATCCTGCGCTGGACGTGCCCGAGTCAAGGAGACACATAAGCCCTGGGGACTGGAGCTACGCG
 TACATGCAG

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

Protein Sequence:

>RG228933 representing NM_001161504
 Red=Cloning site Green=Tags(s)

MLLPAPALRRALLSRPWTGAGLRWKHTSSLKVANEPVLAFTQGS PERDALQKALKDLKGRMEAIPCVVGD
 EEVWTSVQYQVSPFNHGHKVAFCYADKSLNKAIEAALAARKEWDLKPIADRAQIFLKAADMLSGPRR
 AEILAKTMVGQKTVIQAEIDAAEELIDFFRFNAKYAVELEGQQPISVPPSTNSTVYRGLGTFVAAISPF
 NFTAIGGNLAGAPALMGNVVLWKPSDTAMLASYAVYRILREAGLPPNIIQFVFPADGPLFGDVTVSSEHLC
 GINFTGSVPTFKHLWKQVAQNDRFHTFPRLAGECGGNFHFVHRSADVSVSGTLRSFAFEYGGQKCSA
 CSRLYVPHSLWPQIKGRLL EHSRIKVGDP AEDFGTFFSAVIDAKSFARIKKWLEHARSSPSLTILAGGK
 CDDSVGYFVEPCIVESKDPQEPIMKEEIFGPVLSVYVYPPDKYKETLQLIDSTTSYGLTGAVFSQDKDVV
 QEATKVL RNAAGNFYINDKSTGSIVGQPPFGGARASGTNDKPGPHYILRWTSPQVIKETHKPLGDWSYA
 YMQ

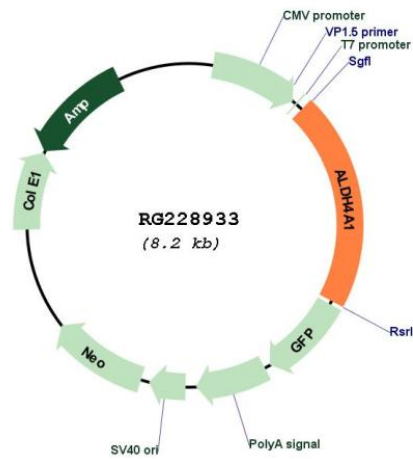
SGP**TRRRLE** - GFP Tag - V

Restriction Sites:

SgfI-RsrII

Cloning Scheme:

Cloning sites used for ORF Shuttling:


Plasmid Map:


ACCN: NM_001161504

ORF Size: 1509 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:	<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_001161504.1 , NP_001154976.1
RefSeq Size:	3259 bp
RefSeq ORF:	1512 bp
Locus ID:	8659
UniProt ID:	P30038
Cytogenetics:	1p36.13
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]