OriGene Technologies, Inc.
9620 Medical Center Drive, Ste 200
Rockville, MD 20850, US
Phone: +1-888-267-4436
https://www.origene.com
techsupport@origene.com
EU: info-de@origene.com
CN: techsupport@origene.cn

Product datasheet for RG204884

ALDH4A1 (NM_170726) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	ALDH4A1 (NM_170726) 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:

>RG204884 representing NM_170726
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGCTGCTGCCGGCGCCCGCGCTCCGCCGCGCCCTGCTGTCCCGCCCCTGGACCGGGGCCGGCCTGCGGT
GGAAGCACACCTCCTCCCTGAAGGTGGCCAACGAGCCCGTCTTAGCCTTCACGCAGGGCAGCCCTGAGCG
AGATGCCCTGCAAAAGGCCTTGAAGGACCTGAAGGGCCGGATGGAAGCCATCCCATGCGTGGTGGGGGAT
GAGGAGGTGTGGACGTCGGACGTGCAGTACCAAGTGTCGCCTTTTAACCATGGACATAAGGTGGCCAAGT
TCTGTTATGCAGACAAGAGCCTGCTCAACAAAGCCATTGAGGCTGCCCTGGCTGCCCGGAAAGAGTGGGA
CCTGAAGCCTATTGCAGACCGGGCCCAGATCTTCCTGAAGGCGGCAGACATGCTGAGTGGGCCGCGCAGG
GCTGAGATCCTCGCCAAGACCATGGTGGGACAGGGTAAGACCGTGATCCAAGCGGAGATTGACGCTGCAG
CGGAACTCATCGACTTCTTCCGGTTCAATGCCAAGTATGCGGTGGAGCTGGAGGGGCAGCAGCCCATCAG
CGTGCCCCCGAGCACCAACAGCACGGTGTACCGGGGTCTGGAGGGCTTCGTGGCGGCCATCTCGCCCTTT
AACTTCACTGCAATCGGCGGCAACCTGGCGGGGGCACCGGCCCTGATGGGCAACGTGGTCCTATGGAAGC
CCAGTGACACTGCCATGCTGGCCAGCTATGCTGTCTACCGCATCCTTCGGGAGGCTGGCCTGCCCCCCAA
CATCATCCAGTTTGTGCCAGCTGATGGGCCCCTATTTGGGGACACTGTCACCAGCTCAGAGCACCTCTGT
GGCATCAACTTCACAGGCAGTGTGCCCACCTTCAAACACCTGTGGAAGCAGGTGGCCCAGAACCTGGACC
GGTTCCACACCTTCCCACGCCTGGCTGGAGAGTGCGGCGGAAAGAACTTCCACTTCGTGCACCGCTCGGC
CGACGTGGAGAGCGTGGTGAGCGGGACCCTCCGCTCAGCCTTCGAGTACGGTGGCCAGAAGTGTTCCGCG
TGCTCGCGTCTCTACGTGCCGCACTCGCTGTGGCCGCAGATCAAAGGGCGGCTGCTGGAGGAGCACAGTC
GGATCAAAGTGGGCGACCCTGCAGAGGATTTTGGGACCTTCTTCTCTGCAGTGATTGATGCCAAGTCCTT
TGCCCGTATCAAGAAGTGGCTGGAGCACGCACGCTCCTCACCCAGCCTCACCATCCTGGCCGGGGGCAAG
TGTGATGACTCCGTGGGCTACTTTGTGGAGCCCTGCATCGTGGAGAGCAAGGACCCTCAGGAGCCCATCA
TGAAGGAGGAGATCTTCGGGCCTGTACTGTCTGTGTACGTCTACCCGGATGACAAGTACAAGGAGACGCT
GCAGCTGGTTGACAGCACCACCAGCTATGGCCTCACGGGGGCAGTGTTCTCCCAGGATAAGGACGTCGTG
CAGGAGGCCACAAAGGTGCTGAGGAATGCTGCCGGCAACTTCTACATCAACGACAAGTCCACTGGCTCGA
TAGTGGGCCAGCAGCCCTTTGGGGGGGCCCGAGCCTCTGGAACCAATGACAAGCCAGGGGGCCCACACTA
CATCCTGCGCTGGACGTCGCCGCAGGTCATCAAGGAGACACATAAGCCCCTGGGGGACTGGAGCTACGCG
TACATGCAG

AGCGGACCGACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

Protein Sequence:

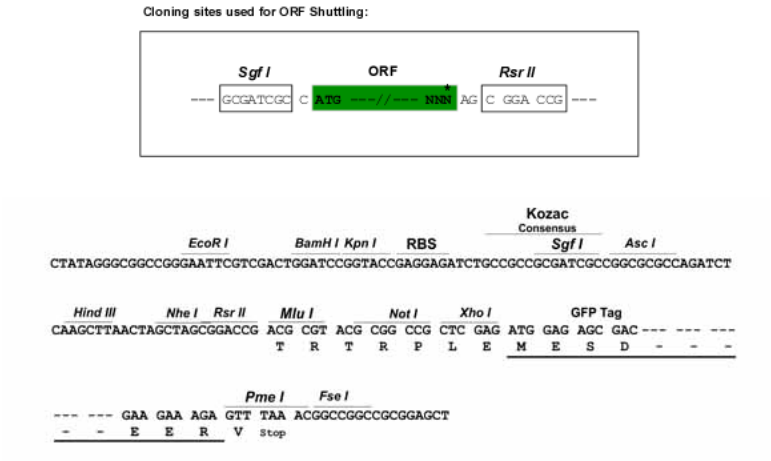
>RG204884 representing NM_170726
Red=Cloning site Green=Tags(s)

MLLPAPALRRALLSRPWTGAGLRWKHTSSLKVANEPVLAFTQGSPERDALQKALKDLKGRMEAIPCVVGD
EEVWTSDVQYQVSPFNHGHKVAKFCYADKSLLNKAIEAALAARKEWDLKPIADRAQIFLKAADMLSGPRR
AEILAKTMVGQGKTVIQAEIDAAAELIDFFRFNAKYAVELEGQQPISVPPSTNSTVYRGLEGFVAAISPF
NFTAIGGNLAGAPALMGNVVLWKPSDTAMLASYAVYRILREAGLPPNIIQFVPADGPLFGDTVTSSEHLC
GINFTGSVPTFKHLWKQVAQNLDRFHTFPRLAGECGGKNFHFVHRSADVESVVSGTLRSAFEYGGQKCSA
CSRLYVPHSLWPQIKGRLLEEHSRIKVGDPAEDFGTFFSAVIDAKSFARIKKWLEHARSSPSLTILAGGK
CDDSVGYFVEPCIVESKDPQEPIMKEEIFGPVLSVYVYPDDKYKETLQLVDSTTSYGLTGAVFSQDKDVV
QEATKVLRNAAGNFYINDKSTGSIVGQQPFGGARASGTNDKPGGPHYILRWTSPQVIKETHKPLGDWSYA
YMQ

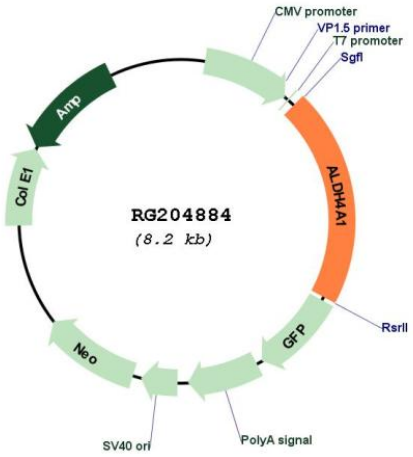
SGPTRTRRLE - GFP Tag - V

Restriction Sites: SgfI-RsrII

Cloning Scheme:



Plasmid Map:



ACCN: NM_170726

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_170726.3
RefSeq Size:	2147 bp
RefSeq ORF:	1692 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]