

Product datasheet for **RC223159**

P5CS (ALDH18A1) (NM_001017423) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	P5CS (ALDH18A1) (NM_001017423) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	P5CS
Synonyms:	ADCL3; ARCL3A; GSAS; P5CS; PYCS; SPG9; SPG9A; SPG9B
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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ORF Nucleotide
Sequence:

>RC223159 representing NM_001017423
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTGCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGCATCGCC**

ATGTTGAGTCAAGTTTACCGCTGTGGTTCAGCCCTTCAACCAACATCTTCTGCCTGGTCAAGTGTA
 CAACCGTCTTCAGATCTCATTGTATCCAGCCTTCAGTCATCAGACATGTTGTTCTGGAGCAACATCCC
 GTTTATCACTGTACCCCTCAGTCGTACACATGGCAAGTCCTCGCCACCAGCAGTGAAGCATGCC
 AAGAGAATCGTGGTGAAGCTCGGCAGTGGCGTGGTACCCGAGGGGATGAATGTGGCCTGGCCCTGGGGC
 GCTTGGCATCTATTGTTGAGCAGGTATCAGTGTGCAGAATCAGGGCAGAGAGATGATGCTGGTACCCAG
 TGGAGCCGTAGCCTTTGGCAAACAACGCTTGCGCCATGAGATCCTTCTGTCTCAGAGCGTGGCCAGGCC
 CTCCTACTCGGGCAGAACAGCTGAAAGAAATGGCAATTCAGTCTTAGAGGCACGAGCCTGTGCAGCTG
 CCGGACAGAGTGGCTGATGGCCTTGTATGAGGCTATGTTTACCCAGTACAGCATCTGTGCTGCCAGAT
 TTTGGTGACCAATTTGGATTTCCATGATGAGCAGAAGCGCCGGAACCTCAATGGAACACTTCATGAACTC
 CTAGAATGAACATTGTCCCATTTGTCAACACAAATGATGCTGTTGTCCCCAGCTGAGCCCAACAGTG
 ACCTGCAGGGGTTATTAGTGTTAAAGATAATGATAGCCTGGCTGCCCGACTGGCTGTGGAATGAAAC
 TGATCTCTTGATTGTTCTTTAGATGTAGAAGGCCTTTTGGACAGCCCCAGGTTAGATGATGCAAAAG
 CTTATTGATATATTTTATCCCGGAGATCAGCAGTCTGTGACATTTGGAACCAAGTCTAGAGTGGGAATGG
 GTGGCATGGAAGCCAAGGTGAAAGCAGCCCTCTGGGCTTTGCAAGGTGGCACTTCTGTTGTTATTGCCAA
 TGGAAACCCACCAAGGTGTCTGGGCAGTGCATCACAGACATTGTGGAGGGGAAGAAAGTTGGTACCTTC
 TTTTCAGAAGTAAAGCCTGCAGGCCCTACTGTTGAGCAGCAGGGAGAAATGGCCGATCTGGAGGAAGGA
 TGTTGGCCACTTGGAACTGAGCAGAGAGCAGAAATTAATCCATCATCTGGCTGATCTGTTGACGGACCA
 CGGTGATGAGATCCTGTTAGCCAACAAAAAAGACTTGGAGGAGGCAGAGGGGAGACTTGCAGCTCCTCTG
 CTGAAACGTTTAAAGCCTCTCCACATCCAAATTGAACAGCCTGGCCATCGGTCTGCGACAGATCGCAGCCT
 CCTCCCAGGACAGCGTGGGACGTGTTTTGCGCCGACCCGAATCGCCAAAACTTGGAACTGGAACAAGT
 GACTGTCCCAATTGGAGTCTGTGCTGGTATCTTTGAATCTCGTCTGACTGTCTACCCAGGTGGCAGCT
 TTGGCTATCGCAAGTGGCAATGGCTTGTACTCAAAGGAGGGAAGGAGGCTGCACACAGCAACCGGATTC
 TCCACCTCTGACCCAGGAGGCTCTCTCAATCCATGGAGTCAAGGAGGCCGTGCAACTGGTGAATACCAG
 AGAAGAAGTTGAAGATCTTTGCCGCTAGACAAAATGATAGATCTGATCATTCCACGTGGCTCTTCCCAG
 CTGGTCAGAGACATCCAGAAAGCTGCTAAGGGGATTCCAGTGTGGGACAGCGAAGGGATCTGTCACA
 TGTATGTGGATCCGAGGCCAGTGTGATAAGGTCAACAGGCTAGTCAGAGACTCTAAATGTGAATATCC
 AGCTGCCTGTAATGCTTTGGAGACTTTGTTAATCCACCGGATCTGCTCAGGACACCATTATTTGACCAG
 ATCATTGATATGCTGAGAGTGGAAACAGGTAAAAATTCATGAGGCCCAAATTTGCCTCCTATCTGACCT
 TCAGCCCTCCGAAGTGAAGTCACTCCGAAGTGAAGTATGGGGACCTGGAATTATGCATTGAAGTAGTGGA
 CAACGTTCAAGGATGCCATTGACCACATCCACAAGTATGGCAGCTCCACACGGATGTCATCGTCACAGAG
 GACGAAAACACAGCGGAGTCTTCTCCTGCAGCAGTAGACAGTGCCTGTGTGTTCTGGAATGCCAGCACTC
 GCTTTTCTGATGGTTACCGCTTTGGACTGGGAGCTGAAGTGGGAATCAGTACATCGAGAATCCACGCCCG
 GGGACCAAGTGGACTTGGGGACTGCTTACTACTAAGTGGCTGCTGCGAGGGAAGGACCAGTGGTCTCA
 GATTTCTCAGAGCATGGAAGTTTAAAATATCTTCATGAGAACCTCCCTATTCTCAGAGAAACACCAAC

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence: >RC223159 representing NM_001017423
Red=Cloning site Green=Tags(s)

MLSQVYRCGFQPFNQHLLPWVKCTTVFRSHCIQPSVIRHVRSWSNIPFITVPLSRTHGKSF AHRSELKHA
KRIVVKLGSAVVTRGDEGLALGRLASIVEQVSVLQNGREMMLVTSGAVAFGKQRLRHEILLSQSVRQA
LHSGQNQLKEMAI PVLEARACAAAAGQSGLMAL YEAMFTQYSICAAQILVTNLDHFDEQRRNLNGTLHEL
LRMNIVPIVNTND AVPPAEPNSDLQGVISVKDNDSLAA RLAVEMKTDLLIVLSDVEGLFDSPPGSDDAK
LIDIFYPGDQQSVTFGTKSRVGMGGMEAKVKAALWALQGGTSVVIANGTHPKVSGHVITDIVEGKKVGT
FSEVKPAGPTVEQQGEMARSGGRMLATLEPEQRAEIIHHLADLLTDQRDEILLANKKDLEEAEGRLAAPL
LKRLSLSTSKLNSLAIGLRQIAASSQDSVGRVLRRTRIAKNLELEQVTVPIGVLLVIFESRPDCLPQVAA
LAIASGNGLLLKGGKEAAHSNRILHLLTQEALSIHG VKEAVQLVNTREEVEDLCRLDKMIDLII PRGSSQ
LVRDIQKAAKGIPVMGHSEGICHMYVDSEASVDK VTRLVRDSKCEYPAACNALETLLIHRDLLRTP LFDQ
IIDMLRVEQVKIHAGPKFASYLTFSPSEVKSLRTEYGDLELCIEVVDNVQDAIDHIIHKYGSSTH DVI VTE
DENTAEFFLQHVD SACVFNASTRFSDGYRFG LGAEVGI STSRIHARGPVGLEGLLTTKWL LRGKDHVVS
DFSEHGSLKYLHENLPIQRNTN

TRTRPLEQKLI SEEDLAANDILDYKDDDDKV

Restriction Sites: SgfI-MluI

Cloning Scheme:

Cloning sites used for ORF Shuttling:



* The last codon before the Stop codon of the ORF

ACCN: NM_001017423

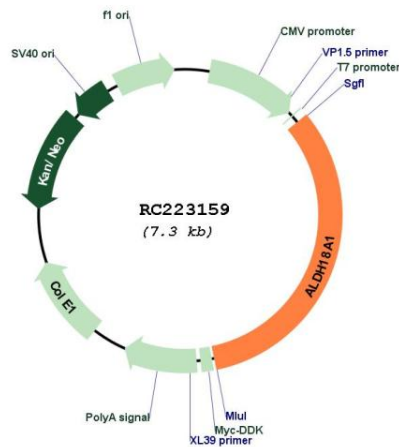
ORF Size: 2379 bp

OTI Disclaimer:	<p>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.</p> <p>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</p>
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_001017423.2
RefSeq Size:	3464 bp
RefSeq ORF:	2382 bp
Locus ID:	5832
UniProt ID:	P54886
Cytogenetics:	10q24.1
Protein Families:	Druggable Genome
Protein Pathways:	Arginine and proline metabolism, Metabolic pathways
MW:	87.1 kDa

Gene Summary:

This gene is a member of the aldehyde dehydrogenase family and encodes a bifunctional ATP- and NADPH-dependent mitochondrial enzyme with both gamma-glutamyl kinase and gamma-glutamyl phosphate reductase activities. The encoded protein catalyzes the reduction of glutamate to delta1-pyrroline-5-carboxylate, a critical step in the de novo biosynthesis of proline, ornithine and arginine. Mutations in this gene lead to hyperammonemia, hypooornithinemia, hypocitrullinemia, hypoargininemia and hypoprolinemia and may be associated with neurodegeneration, cataracts and connective tissue diseases. Alternatively spliced transcript variants, encoding different isoforms, have been described for this gene. [provided by RefSeq, Jul 2008]

Product images:



Circular map for RC223159