

## Product datasheet for **RG210726**

### **P5CS (ALDH18A1) (NM\_002860) Human Tagged ORF Clone**

#### **Product data:**

Product Type:	Expression Plasmids
Product Name:	P5CS (ALDH18A1) (NM_002860) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	ALDH18A1
Synonyms:	ADCL3; ARCL3A; GSAS; P5CS; PYCS; SPG9; SPG9A; SPG9B
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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**ORF Nucleotide Sequence:**

>RG210726 representing NM\_002860  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGGATCGCC**

ATGTTGAGTCAAGTTTACCCTGTGGTCCAGCCCTTCAACCAACATCTTCTGCCCTGGTCAAGTGTA  
 CAACCGTCTTCAGATCTCATTGTATCCAGCCTTCAGTCATCAGACATGTTGTTCTGGAGCAACATCCC  
 GTTTATCACTGTACCCCTCAGTCGTACACATGGCAAGTCCTCGCCACCAGCAGTGAGCTGAAGCATGCC  
 AAGAGAATCGTGGTGAAGCTCGGCAGTGGCGTGGTACCCGAGGGGATGAATGTGGCCTGGCCCTGGGGC  
 GCTTGGCATCTATTGTTGAGCAGGTATCAGTGTGCAGAATCAGGGCAGAGAGATGATGCTGGTACCAG  
 TGGAGCCGTAGCCTTTGGCAAACAACGCTTGCGCCATGAGATCCTTCTGTCTCAGAGCGTGGCCAGGCC  
 CTCCTACTCGGGCAGAACAGCTGAAAGAAATGGCAATTCAGTCTTAGAGGCACGAGCCTGTGCAGCTG  
 CCGGACAGAGTGGCTGATGGCCTTGTATGAGGCTATGTTTACCCAGTACAGCATCTGTGCTGCCAGAT  
 TTTGGTGACCAATTTGGATTTCCATGATGAGCAGAAGCGCCGGAACCTCAATGGAACACTTCATGAACTC  
 CTAGAATGAACATTGTCCCATTTGTCAACACAATGATGCTGTTGTCCCCCAGCTGAGCCCAACAGTG  
 ACCTGCAGGGGTAAATGTTATTAGTGTTAAAGATAATGATAGCCTGGCTGCCCGACTGGCTGTGAAAT  
 GAAAAGCTGATCTTGTATTGTTCTTTCAGATGTAGAAGCCCTTTTGGACAGCCCCCAGGTTTCAGATGAT  
 GCAAAGCTTATTGATATATTTTATCCCGGAGATCAGCAGTCTGTGACATTTGGAATCAAGTCTAGAGTGG  
 GAATGGGTGGCATGGAAGCCAAGGTGAAAGCAGCCCTCTGGGCTTTGCAAGGTGGCACTTCTGTTGTTAT  
 TGCCAAATGGAACCCCAAGGTGTCTGGCAGTCAACAGACATTTGGAGGGGAGAAAGTTGGT  
 ACCTTCTTTTGAAGTAAAGCCTGCAGGCCCTACTGTTGAGCAGCAGGGAGAAATGGCGCATCTGGAG  
 GAAGGATGTTGGCCACCTTGAACCTGAGCAGAGAGCAGAAATTAATCCATCATCTGGCTGATCTGTTGAC  
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 ACAAGTACTGTCCCAATTGGAGTTCTGCTGGTGTCTTTGAATCTCGTCTGACTGTCTACCCAGGTG  
 GCAGCTTTGGCTATCGCAAGTGGCAATGGCTTGTACTCAAAGGAGGGAAGGAGGCTGCACACAGCAACC  
 GGATTCTCCACCTCTGACCCAGGAGGCTCTCAATCCATGGAGTCAAGGAGGCCGTGCAACTGGTGAA  
 TACCAGAGAAGAAGTTGAAGATCTTGGCCCTAGACAAAATGATAGATCTGATCATTCCACGTGGCTCT  
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 GTCACATGATGTGGATTCCGAGGCCAGTGTGATAAGGTCACCAGGCTAGTCAGAGACTCTAAATGTGA  
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 GACCAGATCATTGATGCTGAGAGTGGAAACAGGTAAAAATTCATGCAGGCCCAAAATTTGCCTCTATC  
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 AGTGGACAACGTTTCAGGATGCCATTGACCACATCCACAAGTATGGCAGCTCCACACGGATGTCATCGTC  
 ACAGAGGACGAAAACACAGCGGAGTTCTTCTGCAGCACGTAGACAGTGCCTGTGTGTTCTGGAATGCCA  
 GCACTCGCTTTTCTGATGGTTACCGCTTTGGACTGGGAGCTGAAGTGGGAATCAGTACATCGAGAATCCA  
 CGCCCGGGACCAGTAGGACTTGAGGACTGCTTACTACTAAGTGGCTGCTGCGAGGGAAGGACCAGCTG  
 GTCTCAGATTTCTCAGAGCATGGAAGTTTAAAAATATCTTCATGAGAACCCTCCCTATTCCTCAGAGAAACA  
 CCAAC

**ACGCGTACGCGGCCGCTCGAG** – GFP Tag – GTTTAA

**Protein Sequence:** >RG210726 representing NM\_002860  
Red=Cloning site Green=Tags(s)

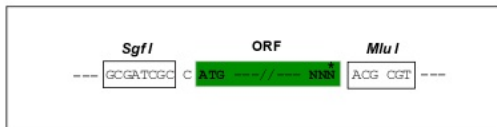
MLSQVYRCGFQPFNQHLLPWVKCTTVFRSHCIQPSVIRHVRSWSNIPFITVPLSRTHGKSF AHRSELKHA  
KRIVVKLGSAVVTRGDEGLALGRLASIVEQVSVLQNGREMMLVTSGAVAFGKQRLRHEILLSQSVRQA  
LHSGQNQLKEMAI PVLEARACAAAGQSGLMAL YEAMFTQYSICAAQILVTNLDFHDEQKRRNLNGLHEL  
LRMNI VPIVNTND AVVPPAEPNSDLQGVNVISVKDNDSLAA RLAVEMKTDLLIVLSDVEGLFDSPPGSDD  
AKLIDIFYPGDQQSVTFGIKSRVGMGGMEAKVKAALWALQGGTSVVIANGTHPKVSGHVITDIVEGKKVG  
TFFSEVKPAGPTVEQQGEMARSGGRMLATLEPEQRAEIIHHLADLLTDQRDEILLANKKDLEEAEGRLAA  
PLLKRLSLSTSKLNSLAIGLRQIAASSQDSVGRVLRRTRIAKNLELEQVTVPIGVLLVIFESRPDCLPQV  
AALAIASGNGLLLKGGKEAAHSNRILHLLTQEALSIHGVEAVQLVNTREEVEDLCRLDKMIDLIIPRGS  
SQLVRDIQKAAGIPVMGHSEGI CHMYVDSEASVDKVTRLVRDSKCEYPAACNALETLIHRDLLRTPLF  
DQIIDMLRVEQVKIHAGPKFASYLTFSPSEVKSLRTEYGDLELCIEVVDNVQDAIDHIIHKYGSSTHDVIV  
TEDENTAEFFLQHVD SACVFNASTRFSDGYRFLGAEVGI STSRIHARGPVGLEGLLTTKWLRLRGKDHV  
VSDFSEHGSLKYLHENLPIQRNTN

TRTRPLE - GFP Tag - V

**Restriction Sites:** Sgfl-MluI

Cloning Scheme:

Cloning sites used for ORF Shutting:



Kozac  
Consensus

*EcoR I*      *BamH I* *Kpn I*      RBS      *Sgf I*      *Asc I*

CTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGSAGATCTGCCGCCGATCGCCGGCGCCAGATCT

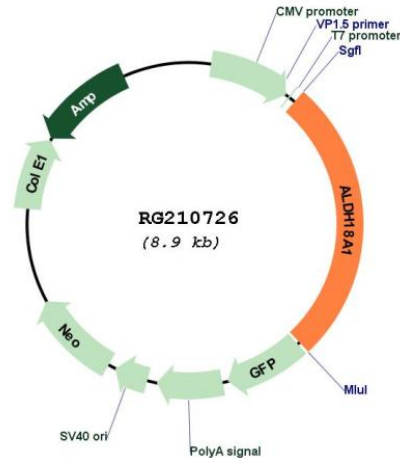
*Hind III*      *Nhe I* *Rsr II*      *Mlu I*      *Not I*      *Xho I*      GFP Tag

CAAGCTTAAGCTAGCTAGCGGACCG      ACG CGT      ACG CGG      CTC GAG      ATG GAG AGC GAC --- --- --- ---  
 T R T R P L E      M E S D - - -

*Pme I*      *Fse I*

--- --- GAA GAA AGA GTT TAA ACGGCCGGCCGGAGCT  
 - - - E E R V Stop

## Plasmid Map:



ACCN: NM\_002860

ORF Size: 2385 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\\_002860.3](#), [NP\\_002851.2](#)

RefSeq Size: 3470 bp

RefSeq ORF: 2388 bp

Locus ID: 5832

UniProt ID: [P54886](#)

Cytogenetics: 10q24.1

<b>Domains:</b>	aakinase, aldedh
<b>Protein Families:</b>	Druggable Genome
<b>Protein Pathways:</b>	Arginine and proline metabolism, Metabolic pathways
<b>Gene Summary:</b>	<p>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, hypoornithinemia, 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]</p>