

Product datasheet for **RG200505**

ALDH2 (NM_000690) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	ALDH2 (NM_000690) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	ALDH2
Synonyms:	ALDH-E2; ALDHI; ALDM
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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ORF Nucleotide Sequence:

>RG200505 representing NM_000690
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**GCGATCGCC**

ATGTTGCGCGCTGCCGCCGCTTCGGGCCCGCCTGGGCCCGCGCCTCTTGTGACGCCGCCACCCAGG
 CCGTGCCTGCCCAACAGCAGCCGAGGTCTTCTGCAACCAGATTTTCATAAAACAATGAATGGCACGA
 TGCCGTACAGCAGAAAACATTCCCACCGTCAATCCGTCCACTGGAGAGGTCATCTGTGACGTTAGCTGAA
 GGGGACAAGGAAGATGTGGACAAGGCAGTGAAGGCCGCCCGGCCGCTTCCAGCTGGGCTCACCTTGGC
 GCCGCATGGACGCATCACACAGGGGCCGCTGCTGAACCGCTGGCCGATCTGATCGAGCGGGACCGGAC
 CTACCTGGCGCCTTGGAGACCTGGACAATGGCAAGCCCTATGTCATCTCTACCTGGTGGATTTGGAC
 ATGGTCTCAAATGTCTCCGGTATTATGCCGGCTGGGCTGATAAGTACCACGGGAAAACCATCCCCATTG
 ACGGAGACTTCTCAGCTACACACGCCATGAACCTGTGGGGTGTGCGGGCAGATCATTCCGTGGAATTT
 CCCGCTCTGATGCAAGCATGGAAGCTGGGCCAGCCTTGGCAACTGAAACGTGGTTGTGATGAAGGTA
 GCTGAGCAGACCCCCTACCGCCTCTATGTGGCCAACCTGATCAAGGAGGCTGGCTTTCCCCCTGGTG
 TGGTCAACATTGTGCCTGGATTTGGCCCCACGGCTGGGGCCGCCATTGCCTCCCATGAGGATGTGGACAA
 AGTGGCATTACAGGCTCCACTGAGATTGGCCGCGTAATCCAGGTTGCTGCTGGGAGCAGCAACCTCAAG
 AGAGTGACCTTGGAGCTGGGGGGGAAGAGCCCCAACATCATCATGTGATGATGCGGATATGGATTGGGCCG
 TGGAACAGGCCACTTCGCCCTGTTCTTCAACAGGGCCAGTGTGCTGTGCCGGCTCCCGGACCTTCGT
 GCAGGAGGACATCTATGATGAGTTTGTGGAGCGGAGCGTGTGCCGGGCCAAGTCTCGGGTGGTGGGAAC
 CCCTTTGATAGCAAGACCGAGCAGGGGCCGAGGTGGATGAAACTCAGTTAAGAAGATCCTCGGCTACA
 TCAACACGGGGAAGCAAGAGGGGGCGAAGCTGCTGTGGTGGGGCATTGCTGCTGACCTGGTTACTT
 CATCCAGCCCACTGTGTTTGGAGATGTGCAGGATGGCATGACCATCGCCAAGGAGGAGATCTTCGGGCCA
 GTGATGCAGATCTGAAGTTCAAGACCATAGAGGAGGTTGTTGGGAGAGCCAACAATTCCACGTACGGGC
 TGGCCGCAGCTGTCTTCAAAAGGATTTGGACAAGGCCAATTACCTGTCCAGGCCCTCCAGGCGGGCAC
 TGTGTGGGTCAACTGCTATGATGTGTTTGGAGCCAGTACCCTTTGGTGGCTACAAGATGTGGGGAGT
 GGCCGGGAGTTGGGCGAGTACGGGCTGCAGGCATACACTGAAGTGAAAACTGTCACAGTCAAAGTGCCTC
 AGAAGAACTCA

ACGCGTACGCGGCCGCTCGAG – GFP Tag – GTTTAA

Protein Sequence:

>RG200505 representing NM_000690
 Red=Cloning site Green=Tags(s)

MLRAAARFGPRLGRLLSAAATQAVPAPNQPEVFCNQIFINNEWHDAVSRKTFPTVNPSTGEVICQVAE
 GDKEDVDKAVKAARAQFLGSPWRRMDASHRGRLLNRLADLIERDRTYLAALETLDNGKPYVISYLVLDL
 MVLKCLRYAGWADKYHGKTIPIIDGDFSYRHEPVGVCQIIPWNFPLLMQAWKLGALATGNVVMKV
 AEQTPLTALYVANLIKEAGFPVGVNIVPGFGPTAGAAIASHEDVDKVAFTGSTEIGRVIQVAAGSSNLK
 RVTLELGGKSPNIIMSDADMDWAVEQAHFALFFNQGCCAGSRTFVQEDIYDEFVERSVARAKSRVGN
 PFDKTEQGPQVDETFKILGYINTGKQEGAKLLCGGGIAADRGYFIQPTVFGDVQDGMTIAKEEIFGP
 VMQILKFKTIEEVVGRANNSTYGLAAAVFTKDLKANYLSQALQAGTVVWNCYDVFQAQSPFGGYKMSG
 GRELGEYGLQAYTEVKTVTKVPQKNS

TRTRPLE – GFP Tag – V

Restriction Sites:

Sgfl-Mlul

Cloning Scheme:


ACCN: NM_000690

ORF Size: 1551 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_000690.4](#)

RefSeq Size: 2445 bp

RefSeq ORF: 1554 bp

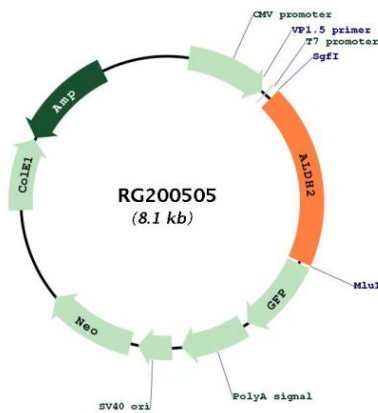
Locus ID: 217

UniProt ID: [P05091](#)

Cytogenetics: 12q24.12

Domains:	aldedh
Protein Families:	Druggable Genome
Protein Pathways:	Arginine and proline metabolism, Ascorbate and aldarate metabolism, beta-Alanine metabolism, Butanoate metabolism, Fatty acid metabolism, Glycerolipid metabolism, Glycolysis / Gluconeogenesis, Histidine metabolism, Limonene and pinene degradation, Lysine degradation, Metabolic pathways, Propanoate metabolism, Pyruvate metabolism, Tryptophan metabolism, Valine, leucine and isoleucine degradation
Gene Summary:	This protein belongs to the aldehyde dehydrogenase family of proteins. Aldehyde dehydrogenase is the second enzyme of the major oxidative pathway of alcohol metabolism. Two major liver isoforms of aldehyde dehydrogenase, cytosolic and mitochondrial, can be distinguished by their electrophoretic mobilities, kinetic properties, and subcellular localizations. Most Caucasians have two major isozymes, while approximately 50% of East Asians have the cytosolic isozyme but not the mitochondrial isozyme. A remarkably higher frequency of acute alcohol intoxication among East Asians than among Caucasians could be related to the absence of a catalytically active form of the mitochondrial isozyme. The increased exposure to acetaldehyde in individuals with the catalytically inactive form may also confer greater susceptibility to many types of cancer. This gene encodes a mitochondrial isoform, which has a low Km for acetaldehydes, and is localized in mitochondrial matrix. Alternative splicing results in multiple transcript variants encoding distinct isoforms.[provided by RefSeq, Nov 2016]

Product images:



Circular map for RG200505