

## Product datasheet for **RC200505**

### **ALDH2 (NM\_000690) Human Tagged ORF Clone**

#### **Product data:**

Product Type:	Expression Plasmids
Product Name:	ALDH2 (NM_000690) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	ALDH2
Synonyms:	ALDH-E2; ALDHI; ALDM
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



[View online »](#)

**ORF Nucleotide Sequence:**

>RC200505 ORF sequence  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**GCGATCGCC**

ATGTTGCGCGCTGCCGCCGCTTCGGGCCCGCCTGGGCCCGCGCCTCTTGTGACGCCGCCACCCAGG  
 CCGTGCCTGCCCAACAGCAGCCGAGGTCTTCTGCAACCAGATTTTCATAAAACAATGAATGGCACGA  
 TGCCGTACAGCAGGAAAACATTCCCACCGTCAATCCGTCCACTGGAGAGGTCATCTGTGACGTTAGCTGAA  
 GGGACAAGGAAGATGTGGACAAGGCAGTGAAGGCCGCCCGGGCCGCTTCCAGCTGGGCTCACCTTGGC  
 GCCGCATGGACGCATCACACAGGGGCCGGCTGCTGAACCGCTGGCCGATCTGATCGAGCGGGACCGGAC  
 CTACCTGGCGCCTTGGAGACCTGGACAATGGCAAGCCCTATGTCATCTCTACCTGGTGGATTGGAC  
 ATGGTCTCAAATGTCTCCGGTATTATGCCGGCTGGGCTGATAAGTACCACGGGAAAACCATCCCATTG  
 ACGGAGACTTCTCAGCTACACACGCCATGAACCTGTGGGGTGTGCGGGCAGATCATTCCGTGGAATTT  
 CCCGCTCTGATGCAAGCATGGAAGCTGGGCCAGCCTTGGCAACTGGAACGTGGTTGTGATGAAGGTA  
 GCTGAGCAGACCCCTACCGCCTCTATGTGGCCAACCTGATCAAGGAGGCTGGCTTCCCCCTGGTG  
 TGGTCAACATTGTGCCTGGATTTGGCCCCACGGCTGGGGCCGCCATTGCCTCCCATGAGGATGTGGACAA  
 AGTGGCATTACAGGCTCCACTGAGATTGGCCGCGTAATCCAGGTTGCTGCTGGGAGCAGCAACCTCAAG  
 AGAGTGACCTTGGAGCTGGGGGGGAAGAGCCCCAACATCATCATGTGATGATGCGGATATGGATTGGGCCG  
 TGGAACAGGCCACTTCGCCCTGTTCTTCAACAGGGCCAGTGTCTGTGCGCGCTCCCGGACCTTCGT  
 GCAGGAGGACATCTATGATGAGTTTGTGGAGCGGAGCGTTGCCCGGGCAAGTCTCGGGTGGTGGGAAC  
 CCCTTTGATAGCAAGACCGAGCAGGGGCCGAGGTGGATGAAACTCAGTTAAGAAGATCCTCGGCTACA  
 TCAACACGGGGAAGCAAGAGGGGGCAAGCTGCTGTGGTGGGGCATTGCTGCTGACCGTGGTTACTT  
 CATCCAGCCCACTGTGTTTGGAGATGTGCAGGATGGCATGACCATCGCCAAGGAGGAGATCTTCGGGCCA  
 GTGATGCAGATCTGAAGTTCAAGACCATAGAGGAGGTTGTTGGGAGAGCCAACAATTCCACGTACGGGC  
 TGGCCGCAGCTGTCTTCAAAAGGATTTGGACAAGGCCAATTACCTGTCCAGGCCCTCCAGGCGGGCAC  
 TGTGTGGGTCAACTGCTATGATGTGTTTGGAGCCAGTACCCTTTGGTGGCTACAAGATGTCGGGGAGT  
 GGCCGGGAGTTGGGCGAGTACGGGCTGCAGGCATACACTGAAGTGAAGTGTACAGTCAAAGTGCCTC  
 AGAAGAACTCA

**ACGCGT**ACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:**

>RC200505 protein sequence  
 Red=Cloning site Green=Tags(s)

MLRAAARFGPRLGRRLLSAAATQAVPAPNQPEVFCNQIFINNEWHDAVSRKTFPTVNPSTGEVICQVAE  
 GDKEDVDKAVKAARAALQLGSPWRRMDASHRGLLNRLADLIERDRTYLALETLDNGKPYVISYLVLDL  
 MVLKCLRYAGWADKYHGKTIPIIDGDFSYTRHEPVGVCQIIPWNFPLLMQAWKLGALATGNVVMKV  
 AEQTPLTALYVANLIKEAGFPPGVVNIIVPGFPTAGAAIASHEDVDKVAFTGSTEIGRVIQVAAGSSNLK  
 RVTLELGGKSPNIIMSDADMWAVEQAHFALFFNQGCCAGSRTFVQEDIYDEFVERSVARAKSRVVG  
 PFDSKTEQGPQVDETQFKKILGYINTGKQEGAKLLCGGGIAADRGYFIQPTVFGDVQDGMTIAKEEIFGP  
 VMQILKFKTIEEVVGRANNSTYGLAAAVFTKDLKANYLSQALQAGTVVWNCYDVFQAQSPFPGGYKMSG  
 GRELGEYGLQAYTEVKTVTKVPQKNS

**TRTRPLEQKLI**SEEDLAANDILDYKDDDDKV

**Chromatograms:**

[https://cdn.origene.com/chromatograms/mk6150\\_e04.zip](https://cdn.origene.com/chromatograms/mk6150_e04.zip)

**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:** 2076 bp

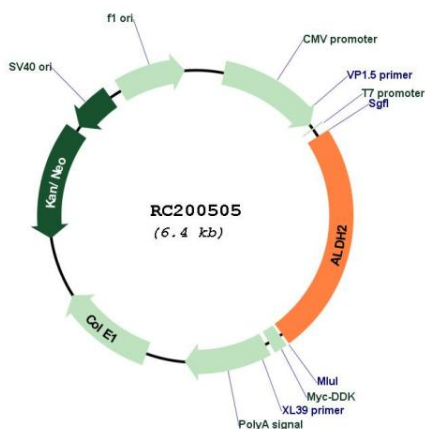
**RefSeq ORF:** 1554 bp

**Locus ID:** 217

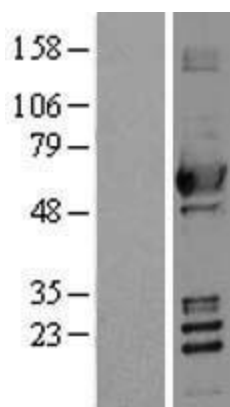
**UniProt ID:** [P05091](#)

**Cytogenetics:** 12q24.12

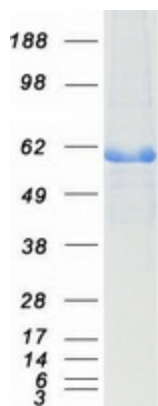
<b>Domains:</b>	aldedh
<b>Protein Families:</b>	Druggable Genome
<b>Protein Pathways:</b>	Arginine and proline metabolism, Ascorbate and aldarate metabolism, beta-Alanine metabolism, Butanoate metabolism, Fatty acid metabolism, Glycerolipid metabolism, Glycolysis / Gluconeogenesis, Histidine metabolism, Limonene and pinene degradation, Lysine degradation, Metabolic pathways, Propanoate metabolism, Pyruvate metabolism, Tryptophan metabolism, Valine, leucine and isoleucine degradation
<b>MW:</b>	56.4 kDa
<b>Gene Summary:</b>	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 RC200505



Western blot validation of overexpression lysate (Cat# [LY400231]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC200505 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified ALDH2 protein (Cat# [TP300505]). The protein was produced from HEK293T cells transfected with ALDH2 cDNA clone (Cat# RC200505) using MegaTran 2.0 (Cat# [TT210002]).