

## Product datasheet for **RC223250**

### ALDH1A2 (NM\_003888) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	ALDH1A2 (NM_003888) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	ALDH1A2
Synonyms:	RALDH(II); RALDH2; RALDH2-T
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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**ORF Nucleotide Sequence:**

>RC223250 representing NM\_003888  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGATCGCC**

ATGACTTCCAGCAAGATAGAGATGCCCGCGAGGTGAAGGCCACCCCGCCCTCATGGCGTCGCTGC  
 ACCTCCTGCCGTGCCCCACGCCAATCTCGAAATTAAGTACACCAAGATCTTTATAAACAACGAGTGGCA  
 GAACTCAGAGAGTGGGAGAGTGTCCCTGTCTATAATCCAGCCACAGGAGAACAGGTGTGTGAAGTTCAA  
 GAAGCAGACAAGGCAGATATAGACAAAGCAGTGCAGGCAGCCCGCTGGCTTTCTCTCTTGGTTCAGTGT  
 GGAGAAGGATGGATGCTTCAGAAAGGGGACGTCTGTTGGATAAGCTTGCAGACTTGGTGGAACGGGACAG  
 GGCAGTCTTTCGAACCATGGAATCCCTAAATGGTGGCAAACCATTCTGCAAGCTTTTTATGTGGATTTG  
 CAGGGCGTCATCAAAACCTTTTCGATATTACGCAGGCTGGGCTGATAAAATTCATGGGATGACCATTCTG  
 TAGATGGAGACTATTTACCTTTACAAGACATGAACCCATTGGAGTGTGTGGACAGATCATCCCATGGAA  
 CTTCCCTCTGCTGATGTTTGCCTGGAAAATAGCTCCAGCTTTGTGCTGTGGCAATACAGTAGTTATTAAG  
 CCAGCAGAGCAAACACCACTCAGTGCACCTACATGGGAGCCCTCATCAAGGAGGCTGGCTTTCCTCCCG  
 GGGTCATCAATATTTTGGCAGGATATGGGCCAACGGCTGGGGCAGCAATAGCTTCTCACATTGGCATAGA  
 CAAGATTGCATTCACAGGCTCTACTGAGGTTGGAAAGCTTATCCAAGAAGCAGCTGGAAGAAGTAATTTG  
 AAGAGAGTAACCTCGAACTTGGAGGCAAAAGTCTAATATTTATTTTGTGCTGATGCTGACTTGGACTATG  
 CTGTGGAGCAGGCCACCAGGCTGTGTTCTTCAATCAAGTGCAGTGTGCACTGCAGGCTCTCGCATCTT  
 CGTGGAGGAGTCCATCTATGAGGAGTTTGTGAGAAGAAGCGTGGAGCGGCCAAGAGGCGGTAGTGGGG  
 AGTCCCTTTGACCCACCACTGAGCAGGCTCCCAAGATTGATAAGAAACAGTACAACAAGATCTTGAAC  
 TCATCCAGAGTGGTGTGGCTGAGGGCGCCAAGCTGGAATGTGGAGCAAAGGACTGGGCCGAAAGGGGTT  
 TTTCAATTGAGCCACAGTGTTCCTCAACGTCAGTGTGATGATGCGGATTGCCAAGGAGGAGATCTTTGGC  
 CCTGTTACAGAAATTTTGTGATTTAAGACGATGGATGAAGTTATCGAAAGAGCCAATAACTCAGACTTTG  
 GACTCGTAGCAGCTGTCTTTACTAATGACATCAACAAGGCCCTCACAGTGTCTTCTGCAATGCAAGCTGG  
 GACTGTTTGGATCAATTGTTACAATGCCTTAAATGCCAGAGCCCTTTGGGGATTCAAGATGTCTGGA  
 AATGGGAGAGAAATGGGAGAATTTGGCTTGCGGGAGTACTCAGAAGTTAAGACGGTGACAGTAAAGATCC  
 CCCAGAAGAACTCC

**ACGCGT**ACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:**

>RC223250 representing NM\_003888  
 Red=Cloning site Green=Tags(s)

MTSSKIEMPGEVKADPAALMASLHLLPSPTPNLEIKYTKIFINNEWQNSESGRVFPVYNPATGEQVCEVQ  
 EADKADIDKAVQAARLAFSLGSVWRRMDASERGLLDKLDLVERDRAVLATMESLNGGKPFLLQAFYVDL  
 QGVIKTFRYYAGWADKIHGMIIPVDGDYFTFTRHEPIGVCQIIPWNFPLLMFAWKIAPALCCGNTVVIK  
 PAEQTPLSALYMGALIKEAGFPVGINILPGYGPTAGAAIASHIGIDKIAFTGSTEVGKLIQEAAGRSNL  
 KRVTLELGGKSPNIIIFADADLDYAVEQAHQGVFFNQGCCTAGSRIFVEESIYEEFVRRSVERAKRRVVG  
 SPFDPTTEQGPQIDKKQYNKILELIQSGVAEGAKLECGGKGLGRKGFIEPTVFSNVTDDMRIAKEEIFG  
 PVQEILRFKTMDEVIERANNSDFGLVAAVFTNDINKALTVSSAMQAGTVWINCYNALNAQSPFGGFKMSG  
 NGREMGEFGLREYSEVKTVTKIPQKNS

**TRTRPLEQKLI**SEEDLAANDILDYKDDDDKV

**Restriction Sites:**

Sgfl-MluI

**Cloning Scheme:**


**ACCN:** NM\_003888

**ORF Size:** 1554 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\\_003888.4](#)

**RefSeq Size:** 3398 bp

**RefSeq ORF:** 1557 bp

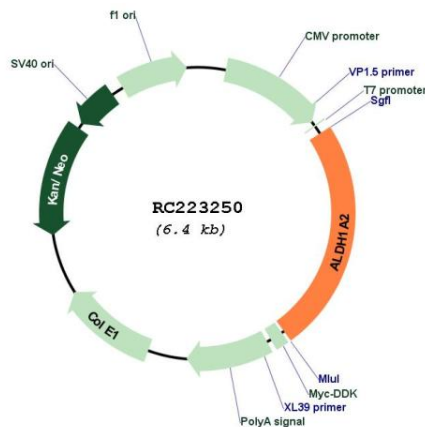
**Locus ID:** 8854

**UniProt ID:** [O94788](#)

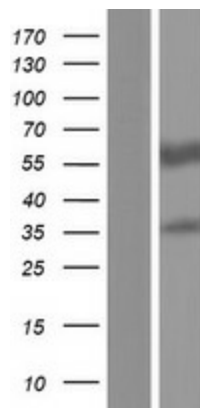
**Cytogenetics:** 15q21.3  
**Domains:** aldedh  
**Protein Families:** Druggable Genome  
**Protein Pathways:** Metabolic pathways, Retinol metabolism  
**MW:** 56.5 kDa

**Gene Summary:** This protein belongs to the aldehyde dehydrogenase family of proteins. The product of this gene is an enzyme that catalyzes the synthesis of retinoic acid (RA) from retinaldehyde. Retinoic acid, the active derivative of vitamin A (retinol), is a hormonal signaling molecule that functions in developing and adult tissues. The studies of a similar mouse gene suggest that this enzyme and the cytochrome CYP26A1, concurrently establish local embryonic retinoic acid levels which facilitate posterior organ development and prevent spina bifida. Four transcript variants encoding distinct isoforms have been identified for this gene. [provided by RefSeq, May 2011]

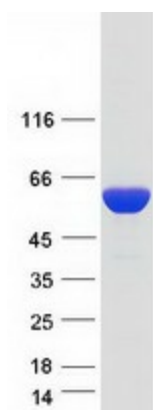
### Product images:



Circular map for RC223250



Western blot validation of overexpression lysate (Cat# [LY418372]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC223250 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified ALDH1A2 protein (Cat# [TP323250]). The protein was produced from HEK293T cells transfected with ALDH1A2 cDNA clone (Cat# RC223250) using MegaTran 2.0 (Cat# [TT210002]).