

Product datasheet for **MG222723**

Aldh7a1 (NM_138600) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Aldh7a1 (NM_138600) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Aldh7a1
Synonyms:	Atq1; D18Wsu181e
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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ORF Nucleotide Sequence:

>MG222723 representing NM_138600
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGGATCGCC**

ATGTCTACTCTGCTGATCCATCATCCCCAGTATGCCTGGCTGCAAGACCTGGGGCTCCGCGAGGATAACG
 AGGGCGTGATAATGGAAGCTGGGGCGGCCGGGAGAGGTAATTACGACCTATTGCTCTGCTAACATGA
 GCCAATAGCAAGAGTCCGACAGGCCAGCCTGAAGGACTATGAAGAAACCATCGGGAAAGCCAAGAAAGCC
 TGGAACTCTGGGAGATATTCTGCCCAAAGCGAGGAGAAATAGTCAGAAAGATTGGCGATGCCTTCC
 GGGAGAAGATTCAACTACTGGGAAGACTGGTGTCTTTGGAGATGGGGAAAATCCTCGTGGAAAGAAATAGG
 CGAGGTTCCAGGAGTACGTGGACGCTGTGACTATGCTGCTGGCTTGTGAGGATGATCGGGGACCCACC
 TTGCCCTTCTGAAAGACCCGGCCATGCTCTCATCGAAATGTGGAATCCCTTAGGCTTGGTGGGAATCATCA
 CTGCCCTCAATTTCCCCGTGGCTGTGTTGGCTGGAACAATGCCATAGCCCTGATCACAGGGAATGTCTG
 CCTTTGAAAGGAGCACCAGCTACGTCCCTCGTTAGTGTGGCTGTCAAAAGATCATAGCCAGGTTTTG
 GAGGACAACCTGCTGCCCGGTGCCATTTGTTCCCTGGTTTGTGGTGGAGCAGATATCGGCACAACGATGG
 CCAGAGATGAGCGTGTGAACCTGCTGCTTCACTGGGAGCACTCAGGTGGGGAAGGAGGTGGCCCTCAT
 GGTGCAGGAGAGGTTTGGGAAAAGCTTGTGGAGCTTGGAGGAAACAACGCCATTATTGCTTTCGAGGAC
 GCGGACCTCAGCTTGGTTGTTCCATCAGTCTGTTTGGCCCGTGGGAACAGCTGGGCAAAGGTGTACCA
 CTGTGAGGCGACTGTTTTGCACGAAAGCATCCATAATGAAGTTGTGGACAGACTGAGAAGTGCCTACTC
 ACAGATCCGTGTCGGGAACCCCTGGGACCCCAATCCTCTATGGACCGCTCCATACCAACAGGCAGTG
 AGCATGTTTGTGAGAGCCGTGGAAGAAGCAAGAAACAAGGGGACAGTGGTCTATGGGGCAAGGTCA
 TGGACCACCTGGCAATTACGTGGAACCCACCATTGTGACCGGCTTGGCCATGATGGCCCAATTGTTCA
 CCAGGAGACTTTTGCCCAATCCTCTATGTCTTCAAATTCAGGATGAAGAAGAGGTCTTTGAATGGAAAC
 AATGAAGTAAACAGGGACTTCAAGTAGTATCTTTACAAAGATTTGGGAGAATCTTCCGCTGGCTTG
 GACCTAAAGTTCCGACTGTGGCATCGTGAACGTCATATTCCTACCAGCGGGGCTGAGATTGGTGGTGC
 GTTTGGCGGAGAGAAGCACACTGGCGGTGGCCGGGAGTCTGGCAGCGACGCCTGGAAGCAGTACATGAGG
 AGATCCACATGTACCATCAACTACAGCAGTCCCTCCCTCGGCTCAGGGAATCAAGTTTCAG

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

Protein Sequence:

>MG222723 representing NM_138600
 Red=Cloning site Green=Tags(s)

MSTLLIHHPQYAWLQDLGLREDNEGVYNGSWGGRGEVITTYCPANNEPIARVRQASLKDYEETIGKAKKA
 WNIWADIPAPKRGEIVRKIGDAFREKIQLLGRVLSLEMGKILVEGIGEVQEYVDVCDYAAGLSRMIGGPT
 LPSEPRGHALIEMWNPLGLVGIITAFNFPVAVFGWNNAIALITGNVCLWKGAPTTSLVSVAVTKIIAQVL
 EDNLLPGAICSLVCGGADIGTTMARDERNLLSFTGSTQVQKEVALMVQERFGKSLLELGGNNAIIAFED
 ADLSLVVPSVLF AAVGTAGQRCTTVRRLFLHESIHNVEVDRLRSAYSQIRVGNPWPDPNIIYGPLHTKQAV
 SMFVRAVEEAKKQGGTVVYGGKVM DHPGNYVEPTIVTGLAHDAPIVHQETFAPILYVFKFQDEEEVFEWN
 NEVKQGLSSSIFTKDLGRIFRWLGP KGSDCGIVNVNIPTSGAEIGGAFGGEKHTGGGREGSDAWKQYMR
 RSTCTINYSTSLPLAQGIKFQ

TRTRPLE - GFP Tag - V

Restriction Sites:

Sgfl-Mlul

Cloning Scheme:

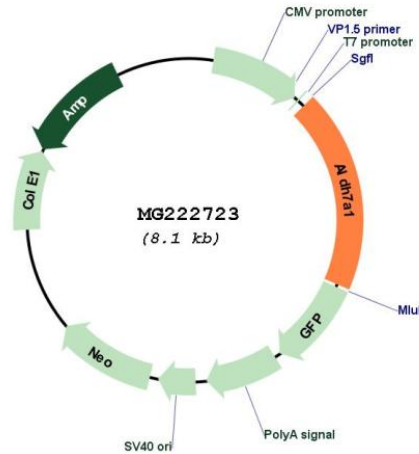
Cloning sites used for ORF Shutting:



EcoRI BamHI KpnI RBS Kozac Consensus SgfI AscI
 CTATAGGGCGGCCGGGAATTCGTGACTGGATCCGGTACCGAGSAGATCTGCCGCCGATCGCCGGCGCCAGATCT

 HindIII NheI RsrII MluI NotI XhoI GFP Tag
 CAAGCTTAACTAGCTAGCGGACCG ACG CGT ACG CGG CCG CTC GAG ATG GAG AGC GAC --- ---
 T R T R P L E M E S D - - -

 PmeI FseI
 --- GAA GAA AGA GTT TAA ACGGCCGGCCGCGGAGCT
 - - E E R V Stop

Plasmid Map:


ACCN: NM_138600

ORF Size: 1617 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_138600.4](#), [NP_613066.2](#)

RefSeq Size: 2911 bp

RefSeq ORF: 1620 bp

Locus ID: 110695

UniProt ID: [Q9DBF1](#)

Cytogenetics: 18 30.55 cM

Gene Summary: Multifunctional enzyme mediating important protective effects. Metabolizes betaine aldehyde to betaine, an important cellular osmolyte and methyl donor. Protects cells from oxidative stress by metabolizing a number of lipid peroxidation-derived aldehydes. Involved in lysine catabolism (By similarity).[UniProtKB/Swiss-Prot Function]