

## Product datasheet for **RC239741**

### Aconitase 1 (ACO1) (NM\_001278352) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Aconitase 1 (ACO1) (NM_001278352) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	ACO1
Synonyms:	ACONS; HEL60; IREB1; IREBP; IREBP1; IRP1
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin



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**ORF Nucleotide Sequence:**

>RC239741 representing NM\_001278352  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGCATCGCC**

ATGAGCAACCCATTTCGCACACCTTGCTGAGCCATTGGATCCTGTACAACCAGAAAGAAATCTTCAATT  
 TGAATAAATTGGAGGATTCAAGATATGGGCGCTTACCATTTTCGATCAGAGTTCTTCTGGAAGCAGCCAT  
 TCGGAATTGTGATGAGTTTTTGGTGAAGAAACAGGATATTGAAAATATTCTACATTGGAATGTCACGCAG  
 CACAAGAACATAGAAGTGCCATTTAAGCCTGCTCGTGTATCCTGCAGGACTTTACGGGTGTGCCCGCTG  
 TGGTTGACTTTGCTGCAATGCGTGATGCTGTGAAAAAGTTAGGAGGAGATCCAGAGAAAAATAACCTGT  
 CTGCCCTGCTGATCTTGAATAGATCATTCCATCCAGTTGATTTCAACAGAAGGGCAGACAGTTTACAG  
 AAGAATCAAGACCTGGAATTTGAAAGAAATAGAGAGCGATTTGAATTTTTAAAGTGGGGTCCCAGGCTT  
 TTCACAACATGCGGATTATCCCTGGCTCAGGAATCATCCACCAGTGAATTTGGAATATTTGGCAAG  
 AGTGGTATTTGATCAGGATGGATATTATCCAGACAGCCTCGTGGGCACAGACTCGCACACTACCATG  
 ATTGATGGCTTGGCATTCTTGGTTGGGGTGTCCGGTGGTATTGAAGCAGAAGCTGTCATGCTGGGTGAGC  
 CAATCAGTATGGTCTTCCCTCAGGTGATTGGCTACAGGCTGATGGGAAGCCCCACCTCTGGTAACATC  
 CACTGACATCGTGTCTCACCATTACCAAGCACCTCCGCCAGGTTGGGGTAGTGGGCAAATTTGTGAGTTC  
 TTCGGGCTGGAGTAGCCAGTTGTCCATTGCTGACCGAGCTACGATTGCTAACATGTGTCCAGAGTACG  
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 AGAAAAATTAAGTATATTAATAAATCTTTCAGGCTGTAGGAATGTTTCGAGATTTCAATGACCCTTCT  
 CAAGACCCAGACTTCACCCAGGTTGTGGAATTAGATTTGAAAACAGTAGTGCCTTGCTGTAGTGACCCCA  
 AAAGCCCTCAGGACAAAGTTGCTGTGTCGACATGAAAAAGGACTTTGAGAGCTGCCTTGGAGCCAAAGCA  
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 CTGTGATGTTAGGGGAGGATTGTAGCAAAGAAAGCTGTGGATGCTGGCCTGAACGTGATGCCTTACAT  
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 TTTTGAAGGTCGAGTTCACCCCAACACCCGGGCAACTATTTAGCCTCTCCCCCTTAGTAAATAGCATAT  
 GCAATTGCTGGAACCATCAGAATCGACTTTGAGAAAGAGCCATTGGGAGTAAATGCAAGGGACAGCAGG  
 TATTTCTGAAAGATATCTGGCCGACTAGAGACGAGATCCAGGCAGTGGAGCGTCAGTATGTCATCCCGGG  
 GATGTTTAAAGGAAGTCTATCAGAAAATAGAGACTGTGAATGAAAGCTGGAATGCCTTAGCAACCCCATCA  
 GATAAGCTGTTTTTCTGGAATCCAAATCTACGTATATCAAATCACACCATTCTTTGAAAACCTGACTT  
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 TGACCACATCTCCCCAGCTGGAATATTGCAAGAAACAGTCTGCTGCTCGTACTTAACAAACAGAGGC  
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 GGAAATCCTTGTGTTGATGCTGTGAGCGGTACCAGCAGGACAGCCTTCCCCTGATCGTTCTGGCT  
 GGCAAAGAGTACGGTGCAGGCAGCTCCCGAGACTGGGCAGCTAAGGGCCCTTTCCTGCTGGGAATCAAAG  
 CCGTCTGGCCGAGAGCTACGAGCGCATTACCCGAGTAACCTGGTTGGGATGGGTGTGATCCCACTTGA  
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 GGTTCGACTGATGTGGAGCTCACTTATTTCTCAACGGGGCATCCTCAACTACATGATCCGCAAGAT  
 GGCCAAG

**ACGCGT**ACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:** >RC239741 representing NM\_001278352  
 Red=Cloning site Green=Tags(s)

MSNPFAHLAEPLDPVQPGKFFNLNKLEDSRYGRLPFSIRVLEAAIRNCDEFLVKKQDIENILHWNVTQ  
 HKNIEVPFKPARVILQDF TGVP AVVDF AAMRDAVKKLG DPEKINPVCPADLVIDHSIQVDFNRRADSLQ  
 KNQDLEFERNRERFEFLKWSQAFHNMRIIPPGSGIIHQVNLEYLARVVF DQDGYYPDSLVTDSHTTM  
 IDLGLILGWGVGGIEAEAVMLGQPI SMVLPQVIGYRLMGKPHPLVTSTDIVLTIITKHLRQVGVGKFVEF  
 FGPVQAQLSIADRATI ANMCEY GATAAFFPVEVSIT YLVQ TGRDEEKLYIKKYLVQAVGMFRDFNDPS  
 QDPDFTQVVELDLKTVVPCCSGPKRPQDKVAVSDMKKDFESCLGAKQGFQVAP EHHNDHKTFIYDNT  
 EFTLAHGSVVIAAITSCTNTSNPSVMLGAGLLAKKAVDAGLNVMPYIKTSLSPGSGVVTYLQESGVMPY  
 LSQ L GFDVVG YGCMT CIGNSGPLPEPVVEAITQGD LVAVGVL SGNRNFEGRVHPNTRANYLASPPLVIAY  
 AIAGTIRIDFEKEPLGVNAKQQVFLKDIWPTRDEIQ AVERQYVIPGMFKEVYQKIETVNESWNLATPS  
 DKLFFWNSKSTYIKSPFFENL TDLQPPKSIVDAYVLLNLGDSVTTDHI SPAGNIARNSPAARYLTNRG  
 LTPREFNSYSGRRNDAVMARGTFANIRLLNRFLNKQAPQTIHLPSGEILDVFDAAERYQQAGLPLIVLA  
 GKEYGAGSSRDWAAGKPFLLG IKA VLAESYERIHRSNLVGMGVIPLEYLPGENADALGLTGQERYTIIIP  
 ENLKPQMKVQVKLDTGKTFQAVMRFD TDVELTYFLNGGILNYMIRKMAK

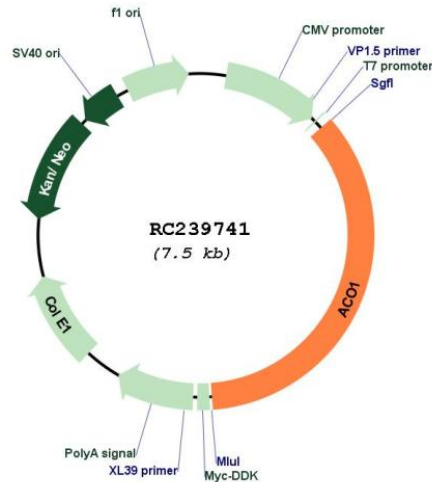
TRTRPLEQKLISEEDLAANDILDYKDDDDKV

**Restriction Sites:**

SgfI-MluI

**Cloning Scheme:**



**Plasmid Map:**


**ACCN:** NM\_001278352

**ORF Size:** 2667 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\\_001278352.1](#), [NP\\_001265281.1](#)

**RefSeq Size:** 3633 bp

**RefSeq ORF:** 2670 bp

**Locus ID:** 48

**UniProt ID:** [P21399](#)

**Cytogenetics:** 9p21.1

<b>Protein Families:</b>	Druggable Genome
<b>Protein Pathways:</b>	Citrate cycle (TCA cycle), Glyoxylate and dicarboxylate metabolism, Metabolic pathways
<b>MW:</b>	98.8 kDa
<b>Gene Summary:</b>	<p>The protein encoded by this gene is a bifunctional, cytosolic protein that functions as an essential enzyme in the TCA cycle and interacts with mRNA to control the levels of iron inside cells. When cellular iron levels are high, this protein binds to a 4Fe-4S cluster and functions as an aconitase. Aconitases are iron-sulfur proteins that function to catalyze the conversion of citrate to isocitrate. When cellular iron levels are low, the protein binds to iron-responsive elements (IREs), which are stem-loop structures found in the 5' UTR of ferritin mRNA, and in the 3' UTR of transferrin receptor mRNA. When the protein binds to IRE, it results in repression of translation of ferritin mRNA, and inhibition of degradation of the otherwise rapidly degraded transferrin receptor mRNA. The encoded protein has been identified as a moonlighting protein based on its ability to perform mechanistically distinct functions. Alternative splicing results in multiple transcript variants [provided by RefSeq, Jan 2014]</p>