

## Product datasheet for **RC201857**

### Aconitase 1 (ACO1) (NM\_002197) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Aconitase 1 (ACO1) (NM_002197) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Aconitase 1
Synonyms:	ACONS; HEL60; IREB1; IREBP; IREBP1; IRP1
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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**ORF Nucleotide Sequence:**

>RC201857 ORF sequence  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGCATCGCC**

ATGAGCAACCCATTTCGCACACCTTGCTGAGCCATTGGATCCTGTACAACCAGGAAAGAAATCTTCAATT  
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**ACGCGT**ACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCTGGATT  
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Protein Sequence: >RC201857 protein sequence  
 Red=Cloning site Green=Tags(s)

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MSNPFAHLAEPLDPVQPGKFFNLNKLEDSRYGRLPFSIRVLEAAIRNCDEFLVKKQDIENILHWNVTQ
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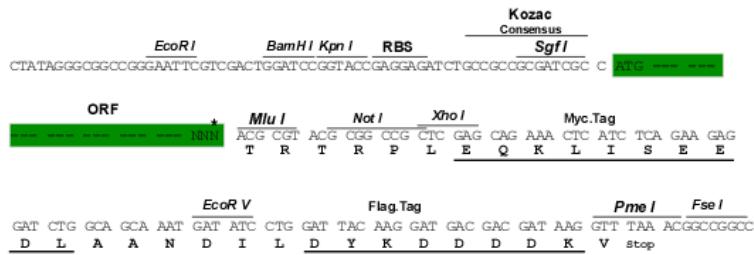
TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms: [https://cdn.origene.com/chromatograms/mk6141\\_a07.zip](https://cdn.origene.com/chromatograms/mk6141_a07.zip)

Restriction Sites: SgfI-MluI

Cloning Scheme:

Cloning sites used for ORF Shuttling:



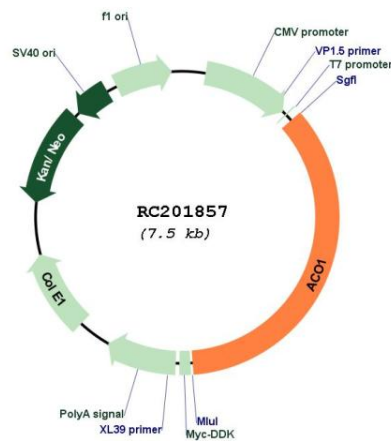
\* The last codon before the Stop codon of the ORF

ACCN: NM\_002197

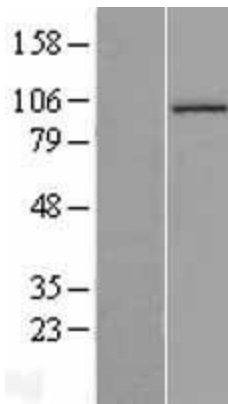
<b>ORF Size:</b>	2667 bp
<b>OTI Disclaimer:</b>	The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. <a href="#">More info</a>
<b>OTI Annotation:</b>	This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.
<b>Components:</b>	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).
<b>Reconstitution Method:</b>	<ol style="list-style-type: none"><li>1. Centrifuge at 5,000xg for 5min.</li><li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li><li>3. Close the tube and incubate for 10 minutes at room temperature.</li><li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li><li>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.</li></ol>
<b>Note:</b>	Plasmids are not sterile. For experiments where strict sterility is required, filtration with 0.22um filter is required.
<b>RefSeq:</b>	<a href="#">NM_002197.3</a>
<b>RefSeq Size:</b>	3561 bp
<b>RefSeq ORF:</b>	2670 bp
<b>Locus ID:</b>	48
<b>UniProt ID:</b>	<a href="#">P21399</a>
<b>Cytogenetics:</b>	9p21.1
<b>Domains:</b>	Aconitase_C, aconitase
<b>Protein Families:</b>	Druggable Genome
<b>Protein Pathways:</b>	Citrate cycle (TCA cycle), Glyoxylate and dicarboxylate metabolism, Metabolic pathways
<b>MW:</b>	98.4 kDa

**Gene Summary:**

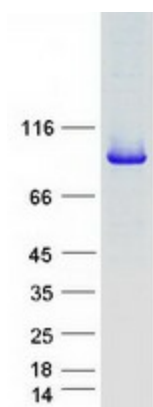
The protein encoded by this gene is a bifunctional, cytosolic protein that functions as an essential enzyme in the TCA cycle and interacts with mRNA to control the levels of iron inside cells. When cellular iron levels are high, this protein binds to a 4Fe-4S cluster and functions as an aconitase. Aconitases 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]

**Product images:**


Circular map for RC201857



Western blot validation of overexpression lysate (Cat# [LY400799]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC201857 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified ACO1 protein (Cat# [TP301857]). The protein was produced from HEK293T cells transfected with ACO1 cDNA clone (Cat# RC201857) using MegaTran 2.0 (Cat# [TT210002]).