

Product datasheet for SC322429

Aconitase 1 (ACO1) (NM_002197) Human Untagged Clone

Product data:

| | |
|---------------------------|---|
| Product Type: | Expression Plasmids |
| Product Name: | Aconitase 1 (ACO1) (NM_002197) Human Untagged Clone |
| Tag: | Tag Free |
| Symbol: | Aconitase 1 |
| Synonyms: | ACONS; HEL60; IREB1; IREBP; IREBP1; IRP1 |
| Mammalian Cell Selection: | Neomycin |
| Vector: | pCMV6-AC (PS100020) |
| E. coli Selection: | Ampicillin (100 ug/mL) |

Fully Sequenced ORF: >OriGene sequence for SC322429
 GCCGTGCAGTCGGAGAACACGTGGCCATCAGTAATCATGAGCAACCCATTTCGCACACCT
 TGCTGAGCCATTGGATCCTGTACAACCAGGAAAGAAATTCCTCAATTTGAATAAATTGGA
 GGATTC AAGATATGGCGCTTACCATTTTCGATCAGAGTTCCTTCTGGAAGCAGCCATTCC
 GAATTGTGATGAGTTTTTGGTGAAGAAACAGGATATTGAAAATATTCTACATTGGAATGT
 CACGCAGCACAAGAACATAGAAGTGCCATTTAAGCCTGCTCGTGTATCCTGCAGGACTT
 TACGGGTGTGCCCTGTGGTTGACTTTGCTGCAATGCGTGATGCTGTGAAAAAGTTAGG
 AGGAGATCCAGAGAAAATAAACCTGTCTGCCCTGCTGATCTTGTAAATAGATCATTCCAT
 CCAGGTTGATTTCAACAGAAGGGCAGACAGTTTACAGAAGAATCAAGACCTGGAATTTGA
 AAGAAATAGAGAGCGATTTGAATTTTTAAAGTGGGGTCCAGGCTTTTCAACATGCG
 GATTATCCCCCTGGCTCAGGAATCATCCACCAGGTGAATTTGGAATATTTGGCAAGAGT
 GGTATTTGATCAGGATGGATATTATTACCCAGACAGCCTCGTGGGCACAGACTCGCACAC
 TACCATGATTGATGGCTTGGGCATTCTTGGTTGGGGTGTCCGGTGTATTGAAGCAGAAGC
 TGTATGCTGGGTGAGCAATCAGTATGGTGTCTCCTCAGGTGATTGGCTACAGGCTGAT
 GGGGAAGCCCCACCCTCTGGTAACATCCACTGACATCGTGTCTCACCATTACCAAGCACCT
 CCGCCAGGTTGGGGTAGTGGCAAAATTTGTCGAGTTCTTCGGGCTGGAGTAGCCAGTT
 GTCCATTGCTGACCGAGCTACGATTGCTAACATGTGTCCAGAGTACGGAGCAACTGCTGC
 CTTTTCCAGTTGATGAAGTTAGTATCACGTACCTGGTGAAACAGGTCTGTGATGAAGA
 AAAATTAAGTATATTAATAAATATCTTCAGGCTGTAGGAATGTTTCGAGATTTCAATGA
 CCCTTCTCAAGACCCAGACTTCACCCAGGTTGTGGAATTAGATTTGAAAACAGTAGTGCC
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 CTTTGAGAGCTGCCTTGGAGCCAAGCAAGGATTTAAAGGATTCCAAGTTGCTCCTGAACA
 TCATAATGACCATAAGACCTTTATCTATGATAAACAATGAATTCACCCCTTGTCTATGGTTC
 TGTGGTCATTGCTGCCATTACTAGCTGCACAAACACCAGTAATCCGTCTGTGATGTTAGG
 GGCAGGATTGTTAGCAAAGAAAGCTGTGGATGCTGGCCTGAACGTGATGCCTTACATCAA
 AACTAGCCTGTCTCCTGGGAGTGGCGTGGTCACCTACTACCTACAAGAAAGCGGAGTCAT
 GCCTTATCTGTCTCAGCTTGGGTTTGACGTGGTGGCTATGGCTGCATGACCTGCATTGG



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CAACAGTGGGCTTTACCTGAACCTGTGGTAGAAGCCATCACACAGGGAGACCTTGTAGC
 TGTTGGAGTACTATCTGGAAACAGGAATTTTGAAGGTCGAGTTCACCCCAACACCCGGGC
 CAACTATTTAGCCTCTCCCCCTTAGTAATAGCATATGCAATTGCTGGAACCATCAGAAT
 CGACTTTGAGAAAGAGCCATTGGGAGTAAATGCAAAGGGACAGCAGGTATTTCTGAAAGA
 TATCTGGCCGACTAGAGACGAGATCCAGGCAGTGGAGCGTCAGTATGTCATCCCGGGGAT
 GTTTAAGGAAGTCTATCAGAAAAAGAGACTGTGAATGAAAGCTGGAATGCCTTAGCAAC
 CCCATCAGATAAGCTGTTTTCTGGAATCCAAATCTACGTATATCAAATCACCACCATT
 CTTTGAAAACCTGACTTTGGATCTTCAGCCCCCTAAATCTATAGTGGATGCCTATGTGCT
 GCTAAATTTGGGAGATTCGGTAACAACCTGACCACATCTCCCCAGCTGGAATATTGCAAG
 AAACAGTCCTGCTGCTCGCTACTTAACAGAGGCCTAACTCCACGAGAATTCAACTC
 CTATGGCTCCCGCCGAGGTAATGACCCGTCATGGCACGGGGAACATTTGCCAACATTGCG
 CTTGTTAAACAGATTTTTGAACAAGCAGGCACCACAGACTATCCATCTGCCTTCTGGGGA
 AATCCTTGATGTGTTGATGCTGCTGAGCGGTACCAGCAGGCAGGCCTTCCCCTGATCGT
 TCTGGCTGGCAAAGAGTACGGTGCAGGCAGCTCCCGAGACTGGGCAGCTAAGGGCCCTTT
 CCTGCTGGGAATCAAAGCCGCTCGGCCGAGAGCTACGAGCGCATTACCAGCAGTAACT
 GGTGGGATGGGTGTGATCCCACTTGAATATCTCCCTGGTGAGAAATGCAGATGCCCTGGG
 GCTCACAGGGCAAGAACGATACACTATCATTATCCAGAAAACCTCAAACCACAAATGAA
 AGTCCAGGTCAAGCTGGATACTGGCAAGACCTTCCAGGCTGTCATGAGGTTTGACTACTGA
 TGTGGAGCTCACTATTTCTCAACGGGGGCATCCTCAACTACATGATCCGCAAGATGGC
 CAAGTAGGAGACGTGCACTTGGTGTGCGCCAGGGAGGAAGCCGCACCACCAGCCAGCG
 CAGGCCCTGGTGGAGAGGCCTCCCTGGCTGCCTCTGGGAGGGGTGCTGCCTTGATAGTGG
 AGCAAGTGAGCACTGAGGGTCTGGTGCCAATCCTGTAGGCACAAAACCAGAAGTTTCTAC
 ATTCTCTATTTTTGTTAATCATCTTCTTTTTCCAGAATTTGGAAGCTAGAATGGTGGG
 AATGTCAGTAGTGCCAGAAAGAGAGAACCAAGTTGTCTTTAAAGTTACTGATCACAGGA
 CGTTGCTTTTTACTGTTTCTATTAATCTTCAGCTGAACACAAGCAAACCTTCTCAGGA
 GGTGTCTCTACCTCTTATTGTTCTCTTACGCTCTGCTCAATGAAACCTTCTCTTGA
 GGGTCATTTTCTTTCTGTATTAATTATACCAGTGTTAAGTGACATAGATAAGAATTTG
 CAACTTCAAATCAGAGCAGTGATTCTCTTCTCTCCCCTTTTCTTCCAGAGTGAATCA
 TCCAGACTCCTCATGGATAGGTCGGGTGTTAAAGTTGTTTTGATTATGTACCTTTTGATA
 GATCCACATAAAAAGAAATGTGAAGTTTTCTTTACTATCTTTTCATTTATCAAGCAGAG
 ACCTTTGTGGGAGGCGGTTTGGGAGAACACATTTCTAATTTGAATGAAATGAAATCTAT
 TTTCAAGTGAATAAAAAAAAAAAAAA

- Restriction Sites:** Please inquire
- ACCN:** NM_002197
- OTI Disclaimer:** Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).
- OTI Annotation:** This TrueClone is provided through our Custom Cloning Process that includes sub-cloning into OriGene's pCMV6 vector and full sequencing to provide a non-variant match to the expected reference without frameshifts, and is delivered as lyophilized plasmid DNA.
- 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_002197.1](#), [NP_002188.1](#)

RefSeq Size: 3498 bp

RefSeq ORF: 2670 bp

Locus ID: 48

UniProt ID: [P21399](#)

Cytogenetics: 9p21.1

Domains: Aconitase_C, aconitase

Protein Families: Druggable Genome

Protein Pathways: Citrate cycle (TCA cycle), Glyoxylate and dicarboxylate metabolism, Metabolic pathways

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] Transcript Variant: This variant (2) differs in the 5' UTR compared to variant 1. Variants 1, 2 and 3 encode the same protein.