

Recombinant Full Length Human ACO1 Protein, C-Flag-tagged

Cat. No. ACO1-531HFL Lot. No. (See product label)

SPECIFICATION

Product Overview	Recombinant Full Length Human ACO1 Protein, fused to Flag-tag at C-terminus, was expressed in Mammalian cells.
Species	Human
Source	Mammalian Cells
ProteinLength	1-889 aa
Description	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.
Form	25 mM Tris HCl, pH 7.3, 100 mM glycine, 10% glycerol.
Molecular Mass	98.2 kDa

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AA Sequence

MSNPFAHLAEPLDPVQPGKKFFNLNKLEDSRYGRLPFSIRVLLEAAIRNCDEFLVKK
 QDIENILHWNVTQ HKNIEVPFKPARVILQDFTGVPVAVDFAAMRDAVKKLGGDPEKI
 NPVCPADLVIDHSIQVDFNRRADSLQ KNQDLEFERNRERFEFLKWGSQAFHNMRII
 PPGSGIIHQVNLEYLARVVFDDQGYYPDSLVTGSDSHTTM IDGLGILGWGVGGIEAE
 AVMLGQPISMVLPQVIGYRLMGKPHPLVTSTDIVLTITKHLRQVGVVGKFVEF FGPG
 VAQLSIADRATIANMCPEYGATAAFFPVDEVSITYLVQTGRDEEKLKYIKKYLQAVGM
 FRDFNDPS QDPDFTQVVELDLKTVVPCCSGPKRPQDKVAVSDMKKDFESCLGAKQ
 GFKGFQVAPEHHNDHKTFIYDNT EFTLAHGSVVIAAITSTNTSNPSVMLGAGLLAK
 KAVDAGLNVMPYIKTSLSPGSGVVITYYLQESGVMPY LSQLGFDVVGYGCMTCIGNS
 GPLPEPVVEAITQGDLVAVGVLSGNRNFEGRVHPNTRANYLASPPLVIAY AIAGTIRI
 DFEKEPLGVNAKGQQVFLKDIWPTRDEIQAVERQYVIPGMFKEVYQKIETVNESWNA
 LATPS DKLFFWNSKSTYIKSPPFFENLTDLQPPKSIVDAYVLLNLGDSVTTDHISPA
 GNIARNSPAARYLTNRG LTPREFNSYGSRRGNDAVMARGTFANIRLLNRFLNKQAP
 QTIHLPSGEILDVFDAAERYQQAGLPLIVLA GKEYGAGSSRDWAAKGPFLLGKAVL
 AESYERIHRSNLVGMGVIPLEYLPGENADALGLTGQERYTIIP
 ENLKPQMKVQVKLDTGKTFQAVMRFDTDVELTYFLNGGILNYMIRKMAKTRTRPLE
 QKLISEEDLAANDILDYKDDDDKV

Purity

> 80% as determined by SDS-PAGE and Coomassie blue staining.

Stability

Stable for 12 months from the date of receipt of the product under proper storage and handling conditions. Avoid repeated freeze-thaw cycles.

Storage

Store at -80 centigrade.

Concentration

>50 ug/mL as determined by microplate BCA method.

Preparation

Recombinant protein was captured through anti-DDK affinity column followed by conventional chromatography steps.

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Protein Families	Druggable Genome
Protein Pathways	Citrate cycle (TCA cycle), Glyoxylate and dicarboxylate metabolism, Metabolic pathways
Full Length	Full L.

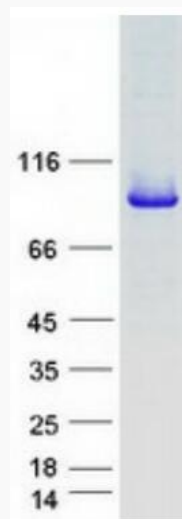
GENE INFORMATION

Gene Name	ACO1 aconitase 1 [Homo sapiens (human)]
Official Symbol	ACO1
Synonyms	IRP1; ACONS; HEL60; IREB1; IREBP; IREBP1
Gene ID	48
mRNA Refseq	NM_002197.3
Protein Refseq	NP_002188.1
MIM	100880
UniProt ID	P21399

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Coomassie blue staining of purified ACO1 protein.

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