

Recombinant Full Length Human ACO1 Protein, GST-tagged

Cat. No. ACO1-782HF **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Human ACO1 full-length ORF (NP_002188.1, 1 a.a. - 889 a.a.) recombinant protein with GST-tag at N-terminal.
Species	Human
Source	In Vitro Cell Free System
ProteinLength	889 amino acids
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 [provided by RefSeq, Jan 2014]
Molecular Mass	124.8 kDa
AA Sequence	MSNPFAHLAE PLDPVQPGKK FFNLNKLEDS RYGRLPFSIR VLLEAAIRNC

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DEFLVKKQDI ENILHWNVTQ HKNIEVPFKP ARVILQDFTG VPAVVDFAAM
 RDAVKKLGGD PEKINPVCPA DLVIDHSIQV DFNRRADSLQ KNQDLEFERN
 RERFEFLKWG SQAFHNMRII PPGSGIIHQV NLEYLARVVF DQDGYYYPDS
 LVGTDSHTTM IDGLGILGWG VGGIEAEAVM LGQPISMVLP QVIGYRLMGK
 PHPLVTSTDI VLTITKHLRQ VGVVGKFVEF FGPGVAQLSI ADRATIANMC
 PEYGATAAFF PVDEVSITYL VQTGRDEEKL KYIKKYLQAV GMFRDFNDPS
 QDPDFTQVVE LDLKTVPCC SGPKRPQDKV AVSDMKKDFE SCLGAKQGFK
 GFQVAPEHHN DHKTFIYDNT EFTLAHGSVV IAAITSCNT SNPSVMLGAG
 LLAKKAVDAG LNVMPYIKTS LSPGSGVVTY YLQESGVMPY LSQLGFDVVG
 YGCMTICIGNS GPLPEPVVEA ITQGDLVAVG VLSGNNRFEG RVHPNTRANY
 LASPPLVIAY AIAGTIRIDF EKEPLGVNAK GQQVFLKDIW PTRDEIQAVE
 RQYVIPGMFK EVYQKIETVN ESWNALATPS DKLFFWNSKS TYIKSPFFFE
 NLTLDLQPPK SIVDAYVLLN LGDSVTTDHI SPAGNIARNS PAARYLTNRG
 LTPREFNSYG SRRGNDAVMA RGTFANIRLL NRFLNKQAPQ TIHLPSGEIL
 DVFDAAERYQ QAGLPLIVLA GKEYGAGSSR DWAAGKPFLL GIKAVLAESY
 ERIHRNLVG MGVIPLEYLP GENADALGLT GQERYTIIP ENLKPQMKVQ
 VKLDTGKTFQ AVMRFDTDVE LTYFLNGGIL NYMIRKMAK

Applications

Enzyme-linked Immunoabsorbent Assay
 Western Blot (Recombinant protein)
 Antibody Production
 Protein Array

Storage

Store at -80 centigrade. Aliquot to avoid repeated freezing and thawing.

Storage Buffer

50 mM Tris-HCl, 10 mM reduced Glutathione, pH=8.0 in the elution buffer.

GENE INFORMATION

Gene Name

ACO1 aconitase 1, soluble [Homo sapiens]

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Official Symbol	ACO1
Synonyms	ACO1; aconitase 1, soluble; IREB1; cytoplasmic aconitate hydratase; IREBP; IRP1; IRE-BP 1; aconitate hydratase; citrate hydro-lyase; iron regulatory protein 1; ferritin repressor protein; iron-responsive element binding protein 1; iron-responsive element-binding protein 1; ACONS; IREBP1
Gene ID	48
mRNA Refseq	NM_002197
Protein Refseq	NP_002188
MIM	100880
UniProt ID	P21399

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