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# Aconitase 1 Protein (ACO1) (AA 1-889) (Strep Tag)



### Overview

Quantity:	1 mg
Target:	Aconitase 1 (ACO1)
Protein Characteristics:	AA 1-889
Origin:	Mouse
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This Aconitase 1 protein is labelled with Strep Tag.
Application:	SDS-PAGE (SDS), Western Blotting (WB), ELISA

### **Product Details**

Sequence:

MKNPFAHLAE PLDAAQPGKR FFNLNKLEDS RYGRLPFSIR VLLEAAVRNC DEFLVKKNDI ENILNWNVMQ HKNIEVPFKP ARVILQDFTG VPAVVDFAAM RDAVKKLGGN PEKINPVCPA DLVIDHSIQV DFNRRADSLQ KNQDLEFERN KERFEFLKWG SQAFCNMRII PPGSGIIHQV NLEYLARVVF DQDGCYYPDS LVGTDSHTTM IDGLGVLGWG VGGIEAEAVM LGQPISMVLP QVIGYKLMGK PHPLVTSTDI VLTITKHLRQ VGVVGKFVEF FGPGVAQLSI ADRATIANMC PEYGATAAFF PVDEVSIAYL LQTGREEDKV KHIQKYLQAV GMFRDFNDTS QDPDFTQVVE LDLKTVVPCC SGPKRPQDKV AVSEMKKDFE SCLGAKQGFK GFQVAPDRHN DRKTFLYSNS EFTLAHGSVV IAAITSCTNT SNPSVMLGAG LLAKKAVEAG LSVKPYIKTS LSPGSGVVTY YLRESGVMPY LSQLGFDVVG YGCMTCIGNS GPLPEPVVEA ITQGDLVAVG VLSGNRNFEG RVHPNTRANY LASPPLVIAY AIAGTVRIDF EKEPLGVNAQ GRQVFLKDIW PTRDEIQAVE RQHVIPGMFK EVYQKIETVN KSWNALAAPS EKLYAWNPKS TYIKSPPFFE SLTLDLQPPK SIVDAYVLLN LGDSVTTDHI SPAGNIARNS PAARYLTNRG LTPREFNSYG SRRGNDAIMA

RGTFANIRLL NKFLNKQAPQ TVHLPSGETL DVFDAAERYQ QAGLPLIVLA GKEYGSGSSR DWAAKGPFLL GIKAVLAESY ERIHRSNLVG MGVIPLEYLP GETADSLGLT GRERYTINIP EDLKPRMTVQ IKLDTGKTFQ AVMRFDTDVE LTYFHNGGIL NYMIRKMAQ

Sequence without tag. The proposed Strep-Tag is based on experience s with the expression system, a different complexity of the protein could make another tag necessary. In case you have a special request, please contact us.

### Characteristics:

### Key Benefits:

- Made in Germany from design to production by highly experienced protein experts.
- Protein expressed with ALiCE® and purified by multi-step, protein-specific process to ensure correct folding and modification.
- These proteins are normally active (enzymatically functional) as our customers have reported (not tested by us and not guaranteed).
- State-of-the-art algorithm used for plasmid design (Gene synthesis).

This protein is a **made-to-order protein** and will be made for the first time for your order. Our experts in the lab will ensure that you receive a correctly folded protein.

The big advantage of ordering our **made-to-order proteins** in comparison to ordering custom made proteins from other companies is that there is no financial obligation in case the protein cannot be expressed or purified.

### Expression System:

- ALiCE®, our Almost Living Cell-Free Expression System is based on a lysate obtained from Nicotiana tabacum c.v.. This contains all the protein expression machinery needed to produce even the most difficult-to-express proteins, including those that require posttranslational modifications.
- During lysate production, the cell wall and other cellular components that are not required for
  protein production are removed, leaving only the protein production machinery and the
  mitochondria to drive the reaction. During our lysate completion steps, the additional
  components needed for protein production (amino acids, cofactors, etc.) are added to
  produce something that functions like a cell, but without the constraints of a living system all that's needed is the DNA that codes for the desired protein!

### Concentration:

- · The concentration of our recombinant proteins is measured using the absorbance at 280nm.
- The protein's absorbance will be measured in several dilutions and is measured against its specific reference buffer.
- We use the Expasy's protparam tool to determine the absorption coefficient of each protein.

# **Product Details**

Purification:	Two step purification of proteins expressed in Almost Living Cell-Free Expression System
	(ALiCE®):
	1. In a first purification step, the protein is purified from the cleared cell lysate using StrepTag
	capture material. Eluate fractions are analyzed by SDS-PAGE.
	<ol><li>Protein containing fractions of the best purification are subjected to second purification step through size exclusion chromatography. Eluate fractions are analyzed by SDS-PAGE and Western blot.</li></ol>
Purity:	≥ 80 % as determined by SDS PAGE, Size Exclusion Chromatography and Western Blot.
Endotoxin Level:	Low Endotoxin less than 1 EU/mg (< 0.1 ng/mg)
Target Details	
Target:	Aconitase 1 (ACO1)
Alternative Name:	Aco1 (ACO1 Products)
Background:	Cytoplasmic aconitate hydratase (Aconitase) (EC 4.2.1.3) (Citrate hydro-lyase) (Iron regulatory
	protein 1) (IRP1) (Iron-responsive element-binding protein 1) (IRE-BP 1),FUNCTION: Bifunctiona
	iron sensor that switches between 2 activities depending on iron availability (By similarity). Iron
	deprivation, promotes its mRNA binding activity through which it regulates the expression of
	genes involved in iron uptake, sequestration and utilization. Binds to iron-responsive elements
	(IRES) in the untranslated region of target mRNAs preventing for instance the translation of
	ferritin and aminolevulinic acid synthase and stabilizing the transferrin receptor mRNA
	(PubMed:1956798). {ECO:0000250 UniProtKB:P21399, ECO:0000269 PubMed:1956798}.,
	FUNCTION: Conversely, when cellular iron levels are high, binds a 4Fe-4S cluster which
	precludes RNA binding activity and promotes the aconitase activity, the isomerization of citrate
	to isocitrate via cis-aconitate. {ECO:0000250 UniProtKB:P21399}.
Molecular Weight:	98.1 kDa
UniProt:	P28271
Pathways:	Transition Metal Ion Homeostasis
Application Details	
Application Notes:	In addition to the applications listed above we expect the protein to work for functional studies
	as well. As the protein has not been tested for functional studies yet we cannot offer a

## **Application Details**

### Comment:

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During lysate production, the cell wall and other cellular components that are not required for protein production are removed, leaving only the protein production machinery and the mitochondria to drive the reaction. During our lysate completion steps, the additional components needed for protein production (amino acids, cofactors, etc.) are added to produce something that functions like a cell, but without the constraints of a living system - all that's needed is the DNA that codes for the desired protein!

Restrictions:

For Research Use only

# Handling

Format:	Liquid
Buffer:	The buffer composition is at the discretion of the manufacturer. If you have a special request, please contact us.
Handling Advice:	Avoid repeated freeze-thaw cycles.
Storage:	-80 °C
Storage Comment:	Store at -80°C.
Expiry Date:	Unlimited (if stored properly)