

**ACO1 Blocking Peptide (Center)**  
Synthetic peptide  
Catalog # BP22029c**Specification**

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**ACO1 Blocking Peptide (Center) - Product Information**

Primary Accession [P21399](#)  
Other Accession [Q0VCU1](#), [Q90875](#), [Q01059](#)

**ACO1 Blocking Peptide (Center) - Additional Information**

Gene ID 48

**Other Names**

Cytoplasmic aconitate hydratase, Aconitase, 4.2.1.3, Citrate hydro-lyase, Ferritin repressor protein, Iron regulatory protein 1, IRP1, Iron-responsive element-binding protein 1, IRE-BP 1, ACO1, IREB1

**Target/Specificity**

The synthetic peptide sequence is selected from aa 374-388 of HUMAN ACO1

**Format**

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

**Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

**Precautions**

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

**ACO1 Blocking Peptide (Center) - Protein Information**

Name ACO1

Synonyms IREB1

**Function**

Bifunctional iron sensor that switches between 2 activities depending on iron availability (PubMed: [1281544](http://www.uniprot.org/citations/1281544), PubMed: [1946430](http://www.uniprot.org/citations/1946430), PubMed: [8041788](http://www.uniprot.org/citations/8041788)). Iron deprivation, promotes its mRNA binding activity through which it regulates the expression of genes involved in iron uptake, sequestration and utilization (PubMed: [1281544](http://www.uniprot.org/citations/1281544), PubMed: [1946430](http://www.uniprot.org/citations/1946430), PubMed: [23891004](http://www.uniprot.org/citations/23891004), PubMed: [8041788](http://www.uniprot.org/citations/8041788)). 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: [1281544](http://www.uniprot.org/citations/1281544), PubMed: [1946430](http://www.uniprot.org/citations/1946430), PubMed: [23891004](http://www.uniprot.org/citations/23891004), PubMed: [8041788](http://www.uniprot.org/citations/8041788)).

#### Cellular Location

Cytoplasm, cytosol.

#### AC01 Blocking Peptide (Center) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Blocking Peptides](#)

#### AC01 Blocking Peptide (Center) - Images

#### AC01 Blocking Peptide (Center) - Background

Iron sensor. Binds a 4Fe-4S cluster and functions as aconitase when cellular iron levels are high. Functions as mRNA binding protein that regulates uptake, sequestration and utilization of iron when cellular iron levels are low. Binds to iron-responsive elements (IRES) in target mRNA species when iron levels are low. Binding of a 4Fe-4S cluster precludes RNA binding.

#### AC01 Blocking Peptide (Center) - References

Hirling H., et al. *Nucleic Acids Res.* 20:33-39(1992).  
Humphray S.J., et al. *Nature* 429:369-374(2004).  
Mural R.J., et al. Submitted (SEP-2005) to the EMBL/GenBank/DDBJ databases.  
Rouault T.A., et al. *Proc. Natl. Acad. Sci. U.S.A.* 87:7958-7962(1990).  
Hentze M.W., et al. *Nucleic Acids Res.* 19:1739-1740(1991).