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Goat Anti-ACO1 / Aconitase 1 Antibody

Peptide-affinity purified goat antibody

Catalog # AF1018a

Specification

Goat Anti-ACO1 / Aconitase 1 Antibody - Product Information

Application	**WB, E**
Primary Accession	P21399
Other Accession	NP_002188, 48, 11428 (mouse), 50655 (rat)
Reactivity	**Human**
Predicted	**Mouse, Rat**
Host	**Goat**
Clonality	**Polyclonal**
Concentration	**100ug/200ul**
Isotype	**IgG**
Calculated MW	**98399**

Goat Anti-ACO1 / Aconitase 1 Antibody - 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

Dilution
WB~~1:1000
E~~N/A

Format
0.5 mg IgG/ml in Tris saline (20mM Tris pH7.3, 150mM NaCl), 0.02% sodium azide, with 0.5% bovine serum albumin

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
Goat Anti-ACO1 / Aconitase 1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Goat Anti-ACO1 / Aconitase 1 Antibody - Protein Information

Name ACO1

Synonyms IREB1

Function
Bifunctional iron sensor that switches between 2 activities depending on iron availability (PubMed:1281544, PubMed:1946430, PubMed: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, PubMed:1946430, PubMed:23891004, PubMed: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, PubMed:1946430, PubMed:23891004, PubMed:8041788).

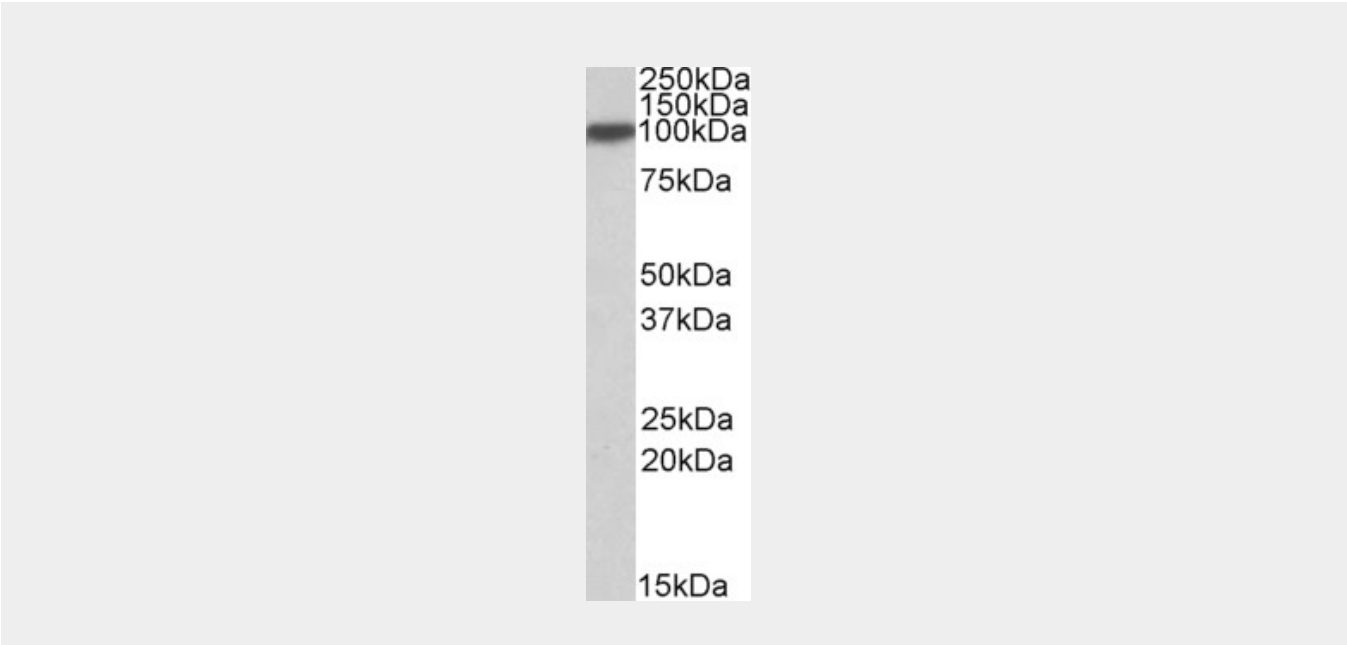
Cellular Location
Cytoplasm, cytosol.

Goat Anti-ACO1 / Aconitase 1 Antibody - Protocols

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

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Goat Anti-ACO1 / Aconitase 1 Antibody - Images



AF1018a (0.1 µg/ml) staining of Human Liver lysate (35 µg protein in RIPA buffer). Primary incubation was 1 hour. Detected by chemiluminescence.

Goat Anti-ACO1 / Aconitase 1 Antibody - Background

Aconitase 1, also known as iron regulatory element binding protein 1 (IREB1), is a cytosolic protein which binds to iron-responsive elements (IREs). IREs are stem-loop structures found in the 5' UTR of ferritin mRNA, and in the 3' UTR of transferrin receptor mRNA. The iron-induced binding to the IRE results in repression of translation of ferritin mRNA, and inhibition of degradation of the otherwise rapidly degrading transferrin receptor mRNA. Thus, IREB1 plays a central role in cellular iron homeostasis. It was also shown to have aconitase activity, and hence grouped with the aconitase family of enzymes.

Goat Anti-ACO1 / Aconitase 1 Antibody - References

Associations of 9p21 variants with cutaneous malignant melanoma, nevi, and pigmentation phenotypes in melanoma-prone families with and without CDKN2A mutations. Yang XR, et al. Fam Cancer, 2010 Jun 24. PMID 20574843.
Interaction of iron regulatory protein-1 (IRP-1) with ATP/ADP maintains a non-IRE-binding state. Popovic Z, et al. Biochem J, 2010 Sep 1. PMID 20569198.
The connectivity map links iron regulatory protein-1-mediated inhibition of hypoxia-inducible factor-2a translation to the anti-inflammatory 15-deoxy-delta12,14-prostaglandin J2. Zimmer M, et al. Cancer Res, 2010 Apr 15. PMID 20354189.
An E3 ligase possessing an iron-responsive hemerythrin domain is a regulator of iron homeostasis. Salahudeen AA, et al. Science, 2009 Oct 30. PMID 19762597.
Control of iron homeostasis by an iron-regulated ubiquitin ligase. Vashisht AA, et al. Science, 2009 Oct 30. PMID 19762596.