10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

ACO2 Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1936C

Product Information

Application	WB, IHC-P, E
Primary Accession	Q99798
Other Accession	Q9ER34, P16276, Q99KI0, P20004
Reactivity	Human, Rat
Predicted	Bovine, Pig
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	85425
Antigen Region	438-467

Additional Information

Gene ID	50
Other Names	Aconitate hydratase, mitochondrial, Aconitase, Citrate hydro-lyase, ACO2
Target/Specificity	This ACO2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 438-467 amino acids from the Central region of human ACO2.
Dilution	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	ACO2 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ACO2
Function	Catalyzes the isomerization of citrate to isocitrate via cis- aconitate.
Cellular Location	Mitochondrion {ECO:0000250|UniProtKB:P16276}.

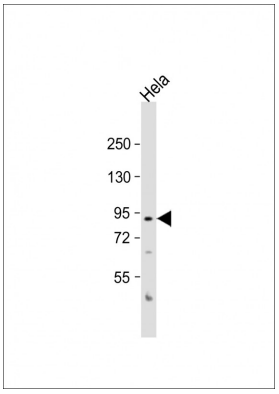
Background

ACO2 belongs to the aconitase/IPM isomerase family. It is an enzyme that catalyzes the interconversion of citrate to isocitrate via cis-aconitate in the second step of the TCA cycle. This protein is encoded in the nucleus and functions in the mitochondrion. It was found to be one of the mitochondrial matrix proteins that are preferentially degraded by the serine protease 15(PRSS15), also known as Lon protease, after oxidative modification.

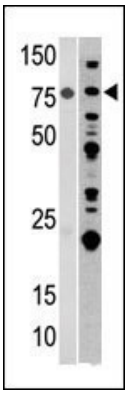
References

Juang, H.H., Mol. Genet. Metab. 81(3):244-252 (2004).
Bota, D.A., et al., Nat. Cell Biol. 4(9):674-680 (2002).
Gruer, M.J., et al., Trends Biochem. Sci. 22(1):3-6 (1997).
Klausner, R.D., et al., Mol. Biol. Cell 4(1):1-5 (1993).
Geurts van Kessel, A.H., et al., Cytogenet. Cell Genet. 28(3):169-172 (1980).

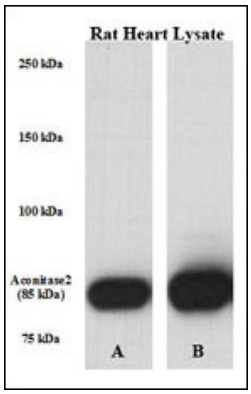
Images



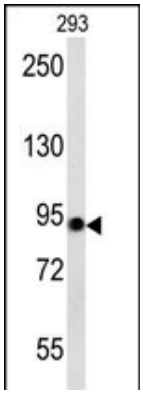
Anti-Aconitase Antibody at 1:1000 dilution + Hela whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 85 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



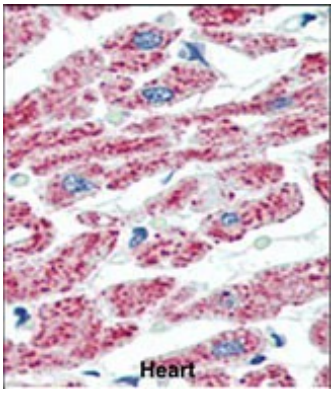
Western blot analysis of anti-ACO2 Pab (Cat. #AP1936c) in mouse heart(left) and 293 (right) tissue lysates (35ug/lane). ACO2(arrow) was detected using the purified Pab.



Perfused isolated rat heart whole tissue lysate was lysed with either A) 50 mM Tris-HCl, 150 mM NaCl, 1 mM EDTA, 1% NP-40, 0.1% SDS, 0.5% Na-deoxycholate, 1 mM Na3VO4, 20 mM NaF, 1 mM PMSF, 5 v/v % protease inhibitor cocktail or B) T-PER Tissue Protein Extraction Reagent [# 785101; Pierce], containing 1mM Na3VO4, 20 mM NaF, 5 v/v % protease inhibitor cocktail (Sigma); PVDF membrane was incubated in primary Ab [rabbit polyclonal antibody against ACO2 (Center) (Cat# AP1936c). Solution: 1:1000 diluted in 5% NFM TBS-T 0,05 for overnight (15 hrs) at 4 ?. Data courtesy of Boglarka Laczy M.D., Division of Cardiovascular Disease, Dept. of Medicine, University of Alabama at Birmingham.



ACO2 (Cat. #AP1936c) western blot analysis in 293 cell line lysates (35ug/lane).This demonstrates the Aconitase antibody detected the Aconitase protein (arrow).



Formalin-fixed and paraffin-embedded human Heart tissue reacted with ACO2 Antibody (Center)(Cat.#AP1936c), which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.

Citations

- Lon protease inactivation in causes unfolded protein stress and inhibition of mitochondrial translation.
- OXIDATIVE STRESS AND MITOCHONDRIAL DYNAMICS MALFUNCTION ARE LINKED IN PELIZAEUS-MERZBACHER DISEASE.
- Mitoferrin modulates iron toxicity in a drosophila model of Friedreich´s ataxia.
- Reduced synaptic vesicle protein degradation at lysosomes curbs TBC1D24/sky-induced neurodegeneration.
- Indomethacin, a non-steroidal anti-inflammatory drug, develops gastropathy by inducing reactive oxygen species-mediated mitochondrial pathology and associated apoptosis in gastric mucosa: a novel role of mitochondrial aconitase oxidation.
- Proteomic profiling reveals a severely perturbed protein expression pattern in aged skeletal muscle.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.