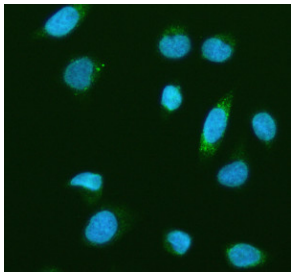
Aconitase 2 Antibody / ACO2 Polyclonal Antibody (R32458)

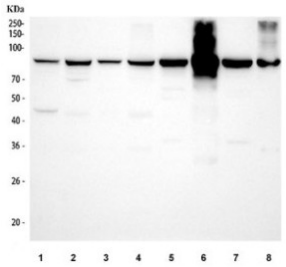
Catalog No.	Formulation	Size
R32458	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q99798
Localization	Cytoplasmic
Applications	Western blot: 0.5-1ug/ml Immunofluorescence: 5ug/ml
Limitations	This Aconitase 2 Antibody / ACO2 Polyclonal Antibody is available for research use only.



Aconitase 2 Antibody detection in SiHa cells by IF. Immunofluorescence analysis of human SiHa cells using the Aconitase 2 Antibody at 5 ug/ml. Green fluorescence is visible as discrete cytoplasmic punctate and granular signal adjacent to the blue-stained nuclei, consistent with the intracellular distribution expected for mitochondrial ACO2. Enzyme-mediated antigen retrieval was performed for 15 minutes before antibody incubation. The staining demonstrates cellular detection of Aconitase 2 with this ACO2 Polyclonal Antibody.



Aconitase 2 Antibody detection across human, rat and mouse samples by WB. Western blot testing with the Aconitase 2 Antibody. Lane 1: human HeLa; lane 2: human U-87 MG; lane 3: human Jurkat; lane 4: human HepG2; lane 5: rat brain; lane 6: rat skeletal muscle; lane 7: mouse brain; lane 8: mouse skeletal muscle. A prominent band is detected near the predicted molecular weight of approximately 85 kDa across all samples, with particularly intense signal in rat skeletal muscle. The cross-species results demonstrate recognition of mitochondrial ACO2 by this ACO2 Polyclonal Antibody in human, rat and mouse lysates.

Description

Aconitase 2 Antibody / ACO2 Polyclonal Antibody recognizes aconitase 2, a mitochondrial enzyme encoded by the ACO2 gene. Also known as mitochondrial aconitase or aconitate hydratase, ACO2 belongs to the aconitase/IPM isomerase family and functions as an important component of the tricarboxylic acid cycle. The enzyme catalyzes the reversible conversion of citrate to isocitrate through the intermediate cis-aconitate. ACO2 is encoded in the nucleus and transported into mitochondria, where it functions primarily within the mitochondrial matrix and contributes to cellular energy metabolism.

Aconitase 2 contains an iron-sulfur cluster that is essential for enzymatic activity and participates directly in substrate binding. This iron-sulfur center is sensitive to oxidation, making ACO2 responsive to changes in the cellular redox environment. Oxidative modification can impair aconitase activity and promote degradation of damaged protein through mitochondrial protein quality-control mechanisms. An Aconitase 2 Antibody can therefore support research examining relationships among mitochondrial metabolism, oxidative stress and maintenance of mitochondrial protein integrity.

ACO2 occupies an important position in intermediary metabolism because the TCA cycle integrates products derived from carbohydrate, lipid and amino acid metabolism with mitochondrial energy production. Changes in ACO2 abundance or activity can influence citrate utilization, isocitrate production and downstream metabolic flux. Its susceptibility to oxidative damage also makes aconitase 2 useful for investigating how mitochondrial dysfunction and reactive oxygen species affect metabolic pathways. An ACO2 Polyclonal Antibody provides a complementary approach for studying this central mitochondrial metabolic enzyme.

Alterations in ACO2 expression, activity and stability have been investigated in metabolic disease, neurodegenerative processes, cardiovascular biology and cancer metabolism. The protein therefore provides a useful connection between mitochondrial energy production and cellular responses to oxidative stress. Its location within the mitochondrial matrix also makes ACO2 relevant to research examining mitochondrial abundance, function and metabolic adaptation. NSJ Bioreagents provides this reagent for researchers investigating mitochondrial aconitase biology and cellular metabolism. An Aconitase 2 Antibody provides a useful tool for studying ACO2 and its relationship to mitochondrial energy metabolism, redox homeostasis and TCA cycle function.

For a monoclonal antibody to this target, see our ACO2 Antibody 4C12D1 / Aconitase 2 Monoclonal Antibody.

Application Notes

Optimal dilution of the Aconitase 2 Antibody / ACO2 Polyclonal Antibody should be determined by the researcher.

Immunogen

Amino acids TSQRLQLLEPFDKWDGKDLEDLQILIKVKGKCTTDH from the human protein were used as the immunogen for the Aconitase 2 antibody.

Storage

Prior to reconstitution, store at 4oC. After reconstitution, the Aconitase 2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

ACO2 antibody, Aconitase-2 antibody, Mitochondrial aconitase antibody, Aconitate hydratase mitochondrial antibody, ACONM antibody

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