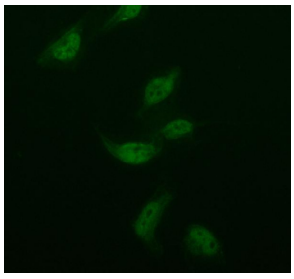
ISOC2 Antibody / Isochorismatase domain-containing protein 2 (FY12695)

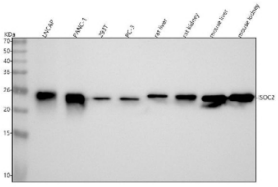
Catalog No.	Formulation	Size
FY12695	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q96AB3
Localization	Nuclear, cytoplasmic
Applications	Western Blot: 0.25-0.5ug/ml Immunofluorescence: 5ug/ml Immunocytochemistry: 5ug/ml ELISA: 0.1-0.5ug/ml
Limitations	This ISOC2 antibody is available for research use only.



Immunofluorescent staining of ISOC2 using anti-ISOC2 antibody (green). ISOC2 was detected in an immunocytochemical section of BEAS-2B cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-ISOC2 antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG was used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of ISOC2 using anti-ISOC2 antibody. Lane 1: human LNCAP whole cell lysates, Lane 2: human PANC-1 whole cell lysates, Lane 3: human 293T whole cell lysates, Lane 4: human PC-3 whole cell lysates, Lane 5: rat liver tissue lysates, Lane 6: rat kidney tissue lysates, Lane 7: mouse liver tissue lysates, Lane 8: mouse kidney tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-ISOC2 antibody at 0.25 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. A specific band was detected for ISOC2 at approximately 22 kDa. The expected molecular weight of ISOC2 is ~22 kDa.

Description

ISOC2 antibody recognizes Isochorismatase domain-containing protein 2, a cytoplasmic enzyme that belongs to the isochorismatase family of hydrolases. Encoded by the ISOC2 gene on chromosome 19p13.12, this protein contains a conserved catalytic isochorismatase domain that hydrolyzes amide bonds in small-molecule substrates, although its physiological substrates in mammalian cells remain incompletely defined. Structural and proteomic studies indicate that ISOC2 may participate in amino acid metabolism, mitochondrial function, and redox homeostasis. The protein localizes to the cytosol and mitochondrial matrix, where it interacts with metabolic enzymes and stress-response factors. Its expression is ubiquitous but highest in metabolically active tissues such as liver, heart, and skeletal muscle.

ISOC2 is evolutionarily conserved from bacteria to humans, suggesting an ancestral enzymatic role in intermediate metabolism. While the bacterial isochorismatases catalyze the hydrolysis of isochorismate to 2,3-dihydroxybenzoate in siderophore biosynthesis, mammalian ISOC2 lacks this function but retains the characteristic aspartate and cysteine residues that form the catalytic dyad. Structural modeling implies that ISOC2 might act on endogenous metabolites involved in oxidative stress pathways or NAD-dependent reactions. Transcriptomic profiling has linked ISOC2 expression to mitochondrial biogenesis and adaptive responses to nutrient deprivation.

The ISOC2 antibody is used to study mitochondrial metabolism, oxidative stress, and protein-protein interactions involving metabolic enzymes. Western blot analysis detects a 30 kilodalton band corresponding to the mature ISOC2 protein, while immunofluorescence shows diffuse cytoplasmic and mitochondrial staining. Elevated ISOC2 expression has been reported in various cancers, including hepatocellular and colorectal carcinoma, where it may contribute to metabolic reprogramming and proliferation. Silencing of ISOC2 in cancer cell lines reduces ATP production and induces apoptosis, indicating its potential role in maintaining energy homeostasis under stress conditions.

In developmental contexts, ISOC2 expression increases during myogenesis and cardiogenesis, reflecting its involvement in energy-demanding differentiation processes. The protein may interact with metabolic regulators such as PGC-1alpha and AMPK to coordinate mitochondrial turnover and antioxidant defense. Because of these broad metabolic implications, the ISOC2 antibody is valuable for basic and translational research in metabolism, oncology, and mitochondrial biology. NSJ Bioreagents provides this antibody validated for its applications, enabling reproducible detection across diverse cell types and tissues.

Application Notes

Optimal dilution of the ISOC2 antibody should be determined by the researcher.

Immunogen

E.coli-derived human ISOC2 recombinant protein (Position: M1-H205) was used as the immunogen for the ISOC2 antibody.

Storage

After reconstitution, the ISOC2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Copyright © NSJ Bioreagents. All rights reserved.