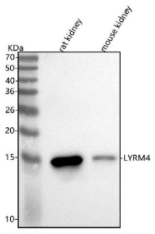
LYRM4 Antibody / LYR motif-containing protein 4 (FY12618)

Catalog No.	Formulation	Size
FY12618	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	Q9HD34
Applications	Western Blot : 0.25-0.5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This LYRM4 antibody is available for research use only.



Western blot analysis of LYRM4 using anti-LYRM4 antibody. Lane 1: rat kidney tissue lysates, Lane 2: 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-LYRM4 antibody at 0.5 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. Western blot probed with anti-LYRM4 shows a major band at ~11 kDa, lower than the predicted ~15 kDa, consistent with the mature mitochondrial form of LYRM4 lacking its cleaved N-terminal targeting sequence.

Description

LYRM4 antibody detects LYR motif-containing protein 4, a mitochondrial scaffold protein essential for assembly of the iron-sulfur (Fe-S) cluster synthesis complex. LYRM4 plays a central role in mitochondrial energy metabolism by stabilizing the cysteine desulfurase NFS1 and facilitating delivery of sulfur to Fe-S cluster acceptor proteins. The LYRM4 antibody is widely used in mitochondrial biology and bioenergetics research to study iron-sulfur assembly, oxidative phosphorylation,

and metabolic regulation.

LYRM4 is encoded by the LYRM4 gene located on human chromosome 6p25.1. The protein is approximately 108 amino acids long and contains a conserved LYR motif (Leucine-Tyrosine-Arginine) that mediates protein-protein interactions within mitochondrial assembly complexes. LYRM4 localizes to the mitochondrial matrix, where it forms a complex with NFS1, ISD11, and ACP (acyl carrier protein) to generate Fe-S clusters required for electron transport chain enzymes and metabolic enzymes such as aconitase and succinate dehydrogenase.

The LYRM4 antibody detects a 12 kilodalton band by western blot and shows mitochondrial matrix localization under immunofluorescence. LYRM4 is indispensable for mitochondrial biogenesis and redox balance. Its loss leads to impaired respiratory chain function, reduced ATP generation, and increased oxidative stress. Inherited mutations in LYRM4 cause mitochondrial disorders characterized by lactic acidosis, muscle weakness, and neurodegeneration.

Beyond its structural role in Fe-S cluster biogenesis, LYRM4 participates in metabolic adaptation under hypoxia and nutrient deprivation, regulating Fe-S cluster allocation between metabolic enzymes. It also influences lipoic acid synthesis and coenzyme Q biosynthesis through shared pathways in mitochondrial metabolism. Dysregulation of LYRM4 has been associated with oxidative damage and mitochondrial DNA instability in various pathologies, including Parkinson's disease and metabolic syndrome.

Because LYRM4 integrates iron-sulfur metabolism with mitochondrial energy production, it serves as a fundamental component of cellular respiration and redox regulation. NSJ Bioreagents provides a validated LYRM4 antibody optimized for its applications, supporting research into Fe-S cluster assembly, oxidative metabolism, and mitochondrial disease mechanisms.

Application Notes

Optimal dilution of the LYRM4 antibody should be determined by the researcher.

Immunogen

E.coli-derived human LYRM4 recombinant protein (Position: M1-T91) was used as the immunogen for the LYRM4 antibody.

Storage

After reconstitution, the LYRM4 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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