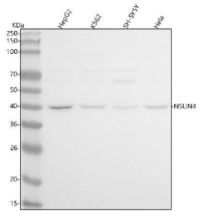
NSUN4 Antibody / NOP2/Sun RNA methyltransferase 4 (FY12068)

Catalog No.	Formulation	Size
FY12068	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
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	Q96CB9
Applications	Western Blot: 0.25-0.5ug/ml ELISA: 0.1-0.5ug/ml
Limitations	This NSUN4 antibody is available for research use only.



Western blot analysis of NSUN4 using anti-NSUN4 antibody. Lane 1: human HepG2 whole cell lysates, Lane 2: human K562 whole cell lysates, Lane 3: human SH-SY5Y whole cell lysates, Lane 4: human Hela whole cell 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-NSUN4 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. The expected band size for NSUN4 is at 43 kDa.

Description

NSUN4 antibody detects NOP2/Sun RNA methyltransferase 4, encoded by the NSUN4 gene. NOP2/Sun RNA methyltransferase 4 is a mitochondrial rRNA methyltransferase that modifies 12S rRNA and plays a critical role in ribosome assembly and mitochondrial translation. NSUN4 antibody provides researchers with a specific reagent for studying RNA modification, mitochondrial function, and disease associated with mitochondrial dysfunction.

NOP2/Sun RNA methyltransferase 4 belongs to the NSUN family of RNA cytosine methyltransferases. Research using NSUN4 antibody has shown that it catalyzes 5-methylcytosine modification of mitochondrial 12S rRNA. This modification is required for proper folding of ribosomal RNA and stability of the small ribosomal subunit. NSUN4 also interacts with MTERF4, forming a complex that regulates assembly of the mitochondrial large ribosomal subunit.

Studies with NSUN4 antibody have revealed that knockout of NSUN4 leads to defective mitochondrial ribosome biogenesis, impaired oxidative phosphorylation, and embryonic lethality in model organisms. These findings emphasize its essential role in mitochondrial translation and energy metabolism. Without NSUN4, mitochondrial protein synthesis collapses, resulting in severe cellular dysfunction.

Dysregulation of NOP2/Sun RNA methyltransferase 4 has been linked to human disease. Research using NSUN4 antibody has shown that mutations cause mitochondrial translation defects, leading to neurodevelopmental delay and cardiomyopathy. In cancer biology, altered NSUN4 expression may contribute to metabolic reprogramming, where cancer cells adapt mitochondrial translation to support growth. These observations highlight the dual importance of NSUN4 in normal physiology and pathology.

NSUN4 antibody is widely used in immunofluorescence, western blotting, and immunohistochemistry. Immunofluorescence demonstrates mitochondrial localization, western blotting quantifies protein levels in mitochondrial fractions, and immunohistochemistry shows expression in tissues with high energy demand such as heart and brain. These applications make NSUN4 antibody indispensable in mitochondrial biology research.

By supplying validated NSUN4 antibody reagents, NSJ Bioreagents supports studies into RNA modification, mitochondrial translation, and disease. Detection of NOP2/Sun RNA methyltransferase 4 provides researchers with insight into how RNA modifying enzymes regulate mitochondrial function and pathology.

Application Notes

Optimal dilution of the NSUN4 antibody should be determined by the researcher.

Immunogen

E.coli-derived human NSUN4 recombinant protein (Position: M1-K379) was used as the immunogen for the NSUN4 antibody.

Storage

After reconstitution, the NSUN4 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.