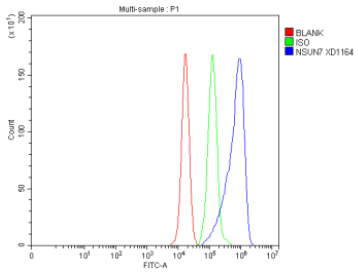
NSUN7 Antibody / NOP2/Sun RNA methyltransferase family member 7 (FY12928)

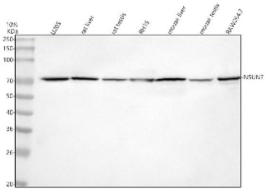
Catalog No.	Formulation	Size
FY12928	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
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	Q8NE18
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This NSUN7 antibody is available for research use only.



Flow Cytometry analysis of PC-3 cells using anti-NSUN7 antibody. Overlay histogram showing PC-3 cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-NSUN7 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



Western blot analysis of NSUN7 using anti-NSUN7 antibody. Lane 1: human U2OS whole cell lysates, Lane 2: rat liver tissue lysates, Lane 3: rat testis tissue lysates, Lane 4: rat RH-35 whole cell lysates, Lane 5: mouse liver tissue lysates, Lane 6: mouse testis tissue lysates, Lane 7: mouse RAW264.7 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-NSUN7 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. A specific band was detected for NSUN7 at approximately 81 kDa. The expected molecular weight of NSUN7 is ~81 kDa.

Description

NSUN7 antibody detects NOP2/Sun RNA methyltransferase family member 7, an enzyme responsible for methylating cytosine residues in RNA molecules, particularly within mitochondrial and spermatozoal transcripts. Encoded by the NSUN7 gene on chromosome 4q26, this enzyme belongs to the RNA cytosine methyltransferase family, which regulates RNA stability, translation, and processing through site-specific methylation. NSUN7 plays key roles in sperm motility, mitochondrial metabolism, and epigenetic control of gene expression.

Structurally, NSUN7 is a 721-amino-acid mitochondrial and cytoplasmic protein of approximately 80 kilodaltons containing a conserved catalytic cysteine motif and an S-adenosylmethionine (SAM)-binding domain required for methyl group transfer. It is expressed predominantly in testes, brain, and metabolic tissues, reflecting its involvement in mitochondrial gene regulation and male fertility. The enzyme localizes to the mitochondrial matrix and cytoplasmic ribonucleoprotein complexes, where it modifies tRNAs and mRNAs.

The NSUN7 antibody is widely used in epigenetics, reproductive biology, and mitochondrial research to study RNA methylation, translational regulation, and sperm function. Western blot analysis detects an 80 kilodalton band corresponding to NSUN7, while immunofluorescence reveals cytoplasmic and mitochondrial staining in germ cells and metabolic tissues. This antibody supports studies examining RNA modification-dependent regulation of gene expression.

Functionally, NSUN7 contributes to mitochondrial energy homeostasis and sperm motility by methylating specific RNA molecules required for mitochondrial translation. Mutations in NSUN7 cause male infertility due to defective sperm motility and impaired mitochondrial activity. Emerging evidence suggests that RNA methylation by NSUN7 influences cellular energy balance and oxidative stress responses beyond the reproductive system. The NSUN7 antibody provides a powerful reagent for studying RNA modification pathways, mitochondrial RNA biology, and epigenetic regulation of metabolism. NSJ Bioreagents validates this antibody for its applications, ensuring reproducible detection across RNA methylation studies.

Application Notes

Optimal dilution of the NSUN7 antibody should be determined by the researcher.

Immunogen

E.coli-derived human NSUN7 recombinant protein (Position: D83-Q457) was used as the immunogen for the NSUN7 antibody.

Storage

After reconstitution, the NSUN7 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.