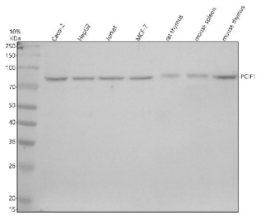
PCIF1 Antibody / Phosphorylated CTD-interacting factor 1 (FY12949)

Catalog No.	Formulation	Size
FY12949	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	Q9H4Z3
Applications	Western Blot : 0.25-0.5ug/ml
Limitations	This PCIF1 antibody is available for research use only.



Western blot analysis of PCIF1 using anti-PCIF1 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human Caco-2 whole cell lysates, Lane 2: human HepG2 whole cell lysates, Lane 3: human Jurkat whole cell lysates, Lane 4: human MCF-7 whole cell lysates, Lane 5: rat thymus tissue lysates, Lane 6: mouse spleen tissue lysates, Lane 7: mouse thymus 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-PCIF1 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 an ECL Plus Western Blotting Substrate. A specific band was detected for PCIF1 at approximately 81 kDa. The expected molecular weight of PCIF1 is ~81 kDa.

Description

PCIF1 antibody detects Phosphorylated CTD-interacting factor 1, an mRNA cap-specific methyltransferase that modifies the first transcribed nucleotide at the 5' cap structure of mRNA. The UniProt recommended name is mRNA cap-specific adenosine N6 methyltransferase (PCIF1), also known as CAPAM or phosphorylated CTD-interacting factor 1. This

enzyme catalyzes the methylation of N6-adenosine in the cap-adjacent nucleotide, creating the m6Am modification, a key regulator of mRNA stability and translation efficiency.

Functionally, PCIF1 antibody identifies a 726-amino-acid nuclear protein that directly interacts with the C-terminal domain (CTD) of RNA polymerase II when it is phosphorylated on Ser5 residues. This interaction positions PCIF1 near nascent transcripts to catalyze co-transcriptional methylation. The resulting m6Am mark enhances mRNA translation efficiency and protects transcripts from decapping and degradation. Through this function, PCIF1 plays a central role in post-transcriptional gene regulation and RNA processing.

The PCIF1 gene is located on chromosome 20q13.13 and encodes a methyltransferase that contains a SAM-dependent catalytic domain typical of N6-adenosine methyltransferases. Its activity is tightly linked to transcriptional elongation and is coordinated with other cap modifications such as m7G capping and 2'-O-methylation. PCIF1 also associates with components of the mRNA export machinery, suggesting a coupling between RNA methylation and nuclear export.

Loss or dysregulation of PCIF1 affects global mRNA methylation profiles, leading to alterations in gene expression, differentiation, and stress response. Studies indicate that depletion of PCIF1 reduces m6Am abundance and decreases translation of specific mRNAs, particularly those involved in growth control and stress adaptation. Conversely, overexpression enhances translation of transcripts with cap-proximal adenosines, promoting cell survival under adverse conditions.

PCIF1 antibody is widely used in research to examine RNA modification pathways, cap-binding protein interactions, and transcriptional regulation. It is valuable for immunoblotting, immunofluorescence, and co-immunoprecipitation assays to identify PCIF1 localization and activity. In cancer studies, aberrant PCIF1 expression correlates with altered methylation landscapes and tumor progression. PCIF1 has also been linked to viral RNA modification, influencing immune detection of viral transcripts.

Through its role in mRNA cap regulation, PCIF1 coordinates multiple levels of gene expression control from transcription initiation to translation. NSJ Bioreagents provides PCIF1 antibody reagents validated for applications in RNA biology, epigenetic regulation, and transcriptional research.

Application Notes

Optimal dilution of the PCIF1 antibody should be determined by the researcher.

Immunogen

A synthetic peptide corresponding to a sequence in the middle region of human PCIF1 was used as the immunogen for the PCIF1 antibody.

Storage

After reconstitution, the PCIF1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.