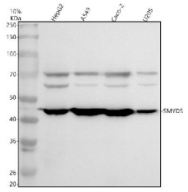
SMYD5 Antibody / SET and MYND domain-containing protein 5 (FY12912)

Catalog No.	Formulation	Size
FY12912	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	Q6GMV2
Applications	Western Blot : 0.25-0.5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This SMYD5 antibody is available for research use only.



Western blot analysis of SMYD5 using anti-SMYD5 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human HepG2 whole cell lysates, Lane 2: human whole cell lysates, Lane 3: human Caco-2 whole cell lysates, Lane 4: human U2OS 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-SMYD5 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 strong ~47 kDa band is detected with additional species at ~60-65 kDa and ~70 kDa. The higher bands are consistent with post-translationally modified SMYD5, particularly ubiquitinated and SUMOylated forms, which add ~8-12 kDa per moiety and yield discrete higher-migrating species, as reported for ubiquitin/SUMO mobility shifts in western blot analyses.

Description

SMYD5 antibody detects SET and MYND domain-containing protein 5, a nuclear histone methyltransferase that modulates chromatin structure and transcriptional regulation. Encoded by the SMYD5 gene on chromosome 2q35, this enzyme belongs to the SMYD family of SET domain-containing proteins, which methylate histone lysine residues and regulate gene expression programs involved in differentiation, metabolism, and inflammation. SMYD5 specifically catalyzes methylation of histone H4 on lysine 20 (H4K20) and influences transcriptional repression of inflammatory and developmental genes.

Structurally, SMYD5 is a 428-amino-acid protein of approximately 47 kilodaltons containing an N-terminal SET domain responsible for methyltransferase activity, a MYND-type zinc finger that mediates protein-protein interactions, and a C-terminal coiled-coil region that targets chromatin-associated complexes. It localizes primarily to the nucleus and interacts with components of the NCoR and SIN3A transcriptional corepressor complexes, linking histone methylation to large-scale transcriptional silencing.

The SMYD5 antibody is widely used in epigenetics, developmental biology, and immunology research to study histone methylation, chromatin regulation, and transcriptional repression. Western blot analysis detects a 47 kilodalton band corresponding to SMYD5, while immunofluorescence shows nuclear punctate staining consistent with chromatin localization. This antibody provides a reliable tool for investigating how methyltransferase activity contributes to transcriptional control and inflammatory gene regulation.

Functionally, SMYD5 acts as a negative regulator of inflammation by repressing toll-like receptor (TLR)-inducible genes and maintaining immune tolerance in macrophages. In embryonic development, SMYD5 influences the transcription of genes involved in metabolism and differentiation. Dysregulation of SMYD5 expression has been linked to metabolic disorders, neurodevelopmental abnormalities, and cancer, where altered histone methylation disturbs gene expression balance. The SMYD5 antibody supports mechanistic research into chromatin-based transcriptional regulation and methylation-dependent signaling. NSJ Bioreagents validates this antibody for its applications, ensuring accurate and reproducible results for chromatin biology studies.

Application Notes

Optimal dilution of the SMYD5 antibody should be determined by the researcher.

Immunogen

E.coli-derived human SMYD5 recombinant protein (Position: R18-F374) was used as the immunogen for the SMYD5 antibody.

Storage

After reconstitution, the SMYD5 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.