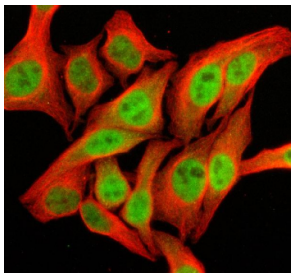
SFMBT2 Antibody / Scm-like with four MBT domains protein 2 (FY13006)

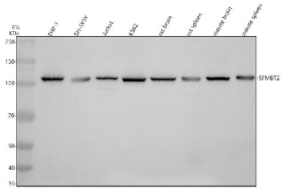
Catalog No.	Formulation	Size
FY13006	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

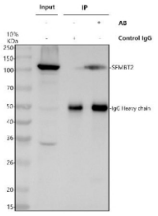
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q5VUG0
Localization	Nuclear
Applications	Western Blot : 0.25-0.5ug/ml Immunocytochemistry/Immunofluorescence : 5ug/ml Immunoprecipitation : 2-4ug/500ug of lysate ELISA : 0.1-0.5ug/ml
Limitations	This SFMBT2 antibody is available for research use only.



Immunofluorescent staining of SFMBT2 using anti-SFMBT2 antibody (green) and anti-Beta Tubulin antibody (red). SFMBT2 was detected in an immunocytochemical section of Hela cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-SFMBT2 antibody and mouse anti-Beta Tubulin antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG and Cy3 Conjugated Goat Anti-Mouse IgG were used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of SFMBT2 using anti-SFMBT2 antibody. Electrophoresis was performed on a 8% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human THP-1 whole cell lysates, Lane 2: human SH-SY5Y whole cell lysates, Lane 3: human Jurkat whole cell lysates, Lane 4: human K562 whole cell lysates, Lane 5: rat brain tissue lysates, Lane 6: rat spleen tissue lysates, Lane 7: mouse brain tissue lysates, Lane 8: mouse spleen 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-SFMBT2 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 SFMBT2 at approximately 101 kDa. The expected molecular weight of SFMBT2 is ~101 kDa.



Immunoprecipitating SFMBT2 in Jurkat whole cell lysate. Western blot analysis of SFMBT2 using anti-SFMBT2 antibody. Lane 1: Jurkat whole cell lysates (30ug), Lane 2: Rabbit control IgG instead of anti-SFMBT2 antibody in Jurkat whole cell lysate, Lane 3: anti-SFMBT2 antibody (2ug) + Jurkat whole cell lysate (500ug). After electrophoresis, proteins were transferred to a membrane. Then the membrane was incubated with rabbit anti-SFMBT2 antibody at a dilution of 0.5 ug/ml and probed with a goat anti-rabbit IgG-HRP secondary antibody. The signal is developed using ECL Plus Western Blotting Substrate. A specific band was detected for SFMBT2 at approximately 101 kDa. The expected molecular weight of SFMBT2 is at 101 kDa.

Description

SFMBT2 antibody detects Scm-like with four MBT domains protein 2, a chromatin-associated transcriptional repressor involved in epigenetic gene silencing. The UniProt recommended name is Scm-like with four MBT domains protein 2 (SFMBT2). This protein belongs to the polycomb group (PcG)-related MBT family, which regulates gene expression through chromatin compaction and histone modification recognition.

Functionally, SFMBT2 antibody identifies a 1220-amino-acid nuclear protein that binds to methylated histones, particularly histone H3 dimethylated on lysine 9 (H3K9me2) and lysine 27 (H3K27me2). SFMBT2 functions as a transcriptional corepressor by stabilizing repressive chromatin domains, thereby restricting transcriptional activation of developmental and cell cycle genes. It is a structural homolog of Drosophila Scm (Sex comb on midleg), which participates in Polycomb repressive complex formation.

The SFMBT2 gene is located on chromosome 8q13.3 and encodes a protein widely expressed in embryonic and adult tissues, with enrichment in stem cells and reproductive organs. SFMBT2 plays a key role in early embryogenesis and trophoblast differentiation by maintaining chromatin architecture and silencing specific developmental genes. In trophoblast stem cells, SFMBT2 contributes to maintenance of stemness and regulation of imprinted gene expression.

Epigenetically, SFMBT2 interacts with histone deacetylases (HDACs) and other repressive complexes to enforce gene silencing. It binds methylated histones through its MBT (malignant brain tumor) domains, which function as methyl-lysine recognition modules. Loss or depletion of SFMBT2 leads to de-repression of silenced loci, chromatin decondensation, and transcriptional misregulation. In cancer, altered SFMBT2 expression has been observed in hepatocellular carcinoma and prostate cancer, implicating it in tumor growth and chromatin remodeling.

SFMBT2 antibody is widely used in epigenetics, chromatin biology, and transcriptional regulation studies. It is suitable for immunoblotting, chromatin immunoprecipitation (ChIP), and immunofluorescence to investigate SFMBT2 localization and histone interactions. This antibody aids in exploring PcG-mediated gene repression and chromatin dynamics in development and disease. It also helps characterize the role of SFMBT2 in maintaining heterochromatin and

transcriptional stability.

Structurally, SFMBT2 contains four MBT domains arranged in tandem that form a histone-binding scaffold, along with N-terminal coiled-coil motifs that mediate protein-protein interactions. Post-translational regulation includes phosphorylation and ubiquitination, which may influence chromatin association. NSJ Bioreagents provides SFMBT2 antibody reagents validated for use in chromatin modification, epigenetic regulation, and developmental biology research.

Application Notes

Optimal dilution of the SFMBT2 antibody should be determined by the researcher.

Immunogen

E.coli-derived human SFMBT2 recombinant protein (Position: Q136-D851) was used as the immunogen for the SFMBT2 antibody.

Storage

After reconstitution, the SFMBT2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.