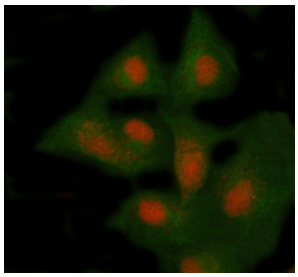
NSMCE4A Antibody / Non-SMC element 4 homolog A (FY12884)

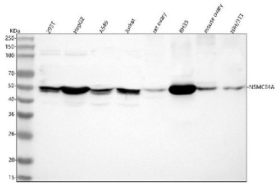
Catalog No.	Formulation	Size
FY12884	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

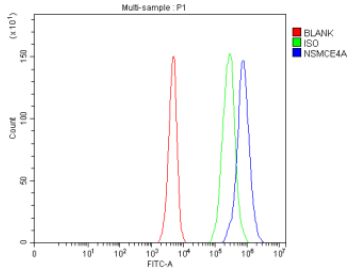
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q9NXX6
Localization	Nuclear
Applications	Western Blot : 0.25-0.5ug/ml Immunocytochemistry : 5ug/ml Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This NSMCE4A antibody is available for research use only.



Immunofluorescent staining of NSMCE4A using anti-NSMCE4A antibody (red) and anti-Beta Tubulin antibody (green). NSMCE4A was detected in immunocytochemical section of cell. 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-NSMCE4A antibody and mouse anti-Beta Tubulin antibody overnight at 4oC. Cy3 Conjugated Goat Anti-Rabbit IgG and DyLight 488 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 NSMCE4A using anti-NSMCE4A antibody. Lane 1: human 293T whole cell lysates, Lane 2: human HepG2 whole cell lysates, Lane 3: human whole cell lysates, Lane 4: human Jurkat whole cell lysates, Lane 5: rat ovary tissue lysates, Lane 6: rat RH35 whole cell lysates, Lane 7: mouse ovary tissue lysates, Lane 8: mouse NIH/3T3 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-NSMCE4A 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. NSMCE4A western blot shows a predominant band at ~50 kDa with a faint lower species. Although the predicted molecular weight is ~44 kDa, NSMCE4A frequently migrates higher due to phosphorylation and other post-translational modifications, producing a characteristic doublet near 48-50 kDa.



Flow Cytometry analysis of JK cells using anti-NSMCE4A antibody. Overlay histogram showing JK cells stained with (Blue line). The cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. And then incubated with rabbit anti-NSMCE4A 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 (Red line) was also used as a control.

Description

NSMCE4A antibody detects Non-structural maintenance of chromosomes element 4A, a core component of the SMC5/6 complex involved in chromosome maintenance, DNA repair, and replication fork stability. Encoded by the NSMCE4A gene on chromosome 10q25.3, this protein forms part of the essential SMC5/6 complex that ensures proper segregation of sister chromatids and preserves genome integrity during cell division and stress. NSMCE4A serves as a bridging subunit, connecting the SMC5 and SMC6 heterodimer to regulatory and enzymatic cofactors that control DNA repair and replication restart.

Structurally, NSMCE4A is a 34 kilodalton nuclear protein that interacts directly with SMC5 and SMC6 through its C-terminal coiled-coil domains, forming a stable hinge component of the complex. Its N-terminal region mediates associations with additional subunits such as NSMCE1 and NSMCE2, which confer ubiquitin ligase activity and DNA damage response signaling capacity. This modular organization enables NSMCE4A to coordinate complex assembly and spatial localization at damaged DNA sites.

The NSMCE4A antibody is widely used in molecular biology, DNA repair, and cell cycle research to study chromosomal maintenance, recombination, and replication dynamics. Western blot analysis identifies a 34 kilodalton band corresponding to NSMCE4A, while immunofluorescence shows punctate nuclear staining that increases following DNA damage. This antibody provides a powerful reagent for investigating the SMC5/6 complex and its role in genome stability.

Functionally, NSMCE4A is required for homologous recombination repair, resolution of DNA replication stress, and suppression of chromosomal rearrangements. Loss of NSMCE4A disrupts complex assembly, leading to DNA double-strand break accumulation and mitotic abnormalities. The SMC5/6 complex, including NSMCE4A, also regulates the maintenance of repetitive DNA sequences and prevents unscheduled recombination at telomeres and ribosomal DNA. Aberrant NSMCE4A expression or mutation has been implicated in genome instability disorders and cancer, where defective repair pathways promote genomic rearrangements. The NSMCE4A antibody enables sensitive detection and quantification of this repair factor in mechanistic studies of DNA integrity, replication stress, and chromosome segregation. NSJ Bioreagents validates this antibody for its applications, ensuring reproducible performance for DNA repair and chromosomal biology applications.

Application Notes

Optimal dilution of the NSMCE4A antibody should be determined by the researcher.

Immunogen

E.coli-derived human NSMCE4A recombinant protein (Position: D69-Q380) was used as the immunogen for the NSMCE4A antibody.

Storage

After reconstitution, the NSMCE4A antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.