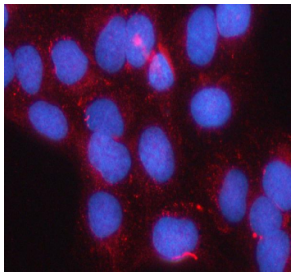
SMC1B Antibody / Structural maintenance of chromosomes protein 1B (FY12780)

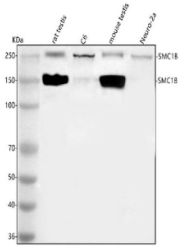
Catalog No.	Formulation	Size
FY12780	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
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	Q8NDV3
Localization	Nuclear, cytoplasmic
Applications	Western Blot: 0.25-0.5ug/ml Immunocytochemistry: 5ug/ml Immunofluorescence: 5ug/ml ELISA: 0.1-0.5ug/ml
Limitations	This SMC1B antibody is available for research use only.



Immunofluorescent staining of SMC1B using anti-SMC1B antibody (red). SMC1B was detected in an immunocytochemical section of U2OA 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-SMC1B antibody overnight at 4oC. Cy3 Conjugated Goat Anti-Rabbit IgG was used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. The section was counterstained with DAPI nuclear stain (blue). Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of SMC1B using anti-SMC1B antibody. Lane 1: rat testis tissue lysates, Lane 2: rat C6 whole cell lysates, Lane 3: mouse testis tissue lysates, Lane 4: mouse Neuro-2a 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-SMC1B 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 major band is detected at ~150 kDa consistent with full-length SMC1B, with an additional band near ~250 kDa that likely represents an SDS-resistant SMC1B-containing complex or dimer enriched in testis.

Description

SMC1B antibody detects Structural maintenance of chromosomes protein 1B, a cohesin complex component essential for chromosome cohesion during meiosis. Encoded by the SMC1B gene on chromosome 22q13.33, this protein is a meiosis-specific paralog of the somatic cohesin subunit SMC1A. SMC1B forms part of the cohesin ring complex that links sister chromatids and facilitates homologous recombination and synapsis. It ensures accurate chromosome segregation and genomic integrity in germ cells, playing a critical role in gametogenesis and fertility.

SMC1B forms heterodimers with SMC3 and associates with meiosis-specific cohesin components such as REC8, STAG3, and RAD21L. Together, these proteins establish and maintain cohesion between homologous chromosomes from prophase I until anaphase I, preventing premature separation. SMC1B also contributes to chromatin organization, double-strand break repair, and gene regulation during meiosis. Its expression is restricted mainly to germ cells in the testes and ovaries, though low levels may be detected in certain somatic tissues under specific developmental conditions.

The SMC1B antibody is used in cell biology, reproductive, and chromatin research to investigate cohesin complex formation and meiotic chromosome dynamics. Western blot analysis identifies a 145 kilodalton band corresponding to SMC1B, while immunofluorescence reveals chromosomal axis localization in meiotic cells. This antibody supports studies of meiotic cohesion, synaptonemal complex assembly, and chromosomal recombination.

Deficiency or mutation of SMC1B disrupts chromosome pairing and leads to infertility, meiotic arrest, or aneuploidy. Beyond meiosis, SMC1B may contribute to chromatin architecture and DNA repair in somatic cells. The SMC1B antibody provides a powerful tool for characterizing cohesin-mediated chromosome interactions and meiotic mechanisms. NSJ Bioreagents supplies this antibody validated for western blotting and immunofluorescence, ensuring reliable performance in chromosomal cohesion and germ cell research.

Application Notes

Optimal dilution of the SMC1B antibody should be determined by the researcher.

Immunogen

E.coli-derived human SMC1B recombinant protein (Position: R106-D1221) was used as the immunogen for the SMC1B antibody.

Storage

After reconstitution, the SMC1B antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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