

Anti-SMC3 Antibody Picoband™ (monoclonal, 4C12)

Catalog # ABO14780

Product Information

Application	WB, IHC
Primary Accession	Q9UQE7
Host	Mouse
Isotype	Mouse IgG1
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Format	Lyophilized
Description	Anti-SMC3 Antibody Picoband™ (monoclonal, 4C12) . Tested in IHC, WB applications. This antibody reacts with Human, Mouse, Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	9126
Other Names	Structural maintenance of chromosomes protein 3, SMC protein 3, SMC-3, Basement membrane-associated chondroitin proteoglycan, Bamacan, Chondroitin sulfate proteoglycan 6, Chromosome-associated polypeptide, hCAP, SMC3, BAM, BMH, CSPG6, SMC3L1
Calculated MW	141542
Application Details	Western blot, 0.1-0.5 µg/ml Immunohistochemistry (Paraffin-embedded Section), 0.5-1 µg/ml
Subcellular Localization	Nucleus
Source	Eukaryota
Contents	Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.
Clone Names	Clone: 4C12
Immunogen	A synthetic peptide corresponding to a sequence at the C-terminus of human SMC3 , identical to the related mouse sequence.
Cross Reactivity	No cross-reactivity with other proteins.
Storage	Store at -20 °C for one year from date of receipt. After reconstitution, at 4 °C for one month. It can also be aliquotted and stored frozen at -20 °C for six months. Avoid repeated freeze-thaw cycles.

Protein Information

Name	SMC3
Synonyms	BAM, BMH, CSPG6, SMC3L1
Function	Central component of cohesin, a complex required for chromosome cohesion during the cell cycle. The cohesin complex may form a large proteinaceous ring within which sister chromatids can be trapped. At anaphase, the complex is cleaved and dissociates from chromatin, allowing sister chromatids to segregate. Cohesion is coupled to DNA replication and is involved in DNA repair. The cohesin complex also plays an important role in spindle pole assembly during mitosis and in chromosomes movement.
Cellular Location	Nucleus {ECO:0000250 UniProtKB:Q9CW03}. Chromosome {ECO:0000250 UniProtKB:Q9CW03}. Chromosome, centromere {ECO:0000250 UniProtKB:Q9CW03}. Note=Associates with chromatin. Before prophase it is scattered along chromosome arms. During prophase, most of cohesin complexes dissociate from chromatin probably because of phosphorylation by PLK, except at centromeres, where cohesin complexes remain. At anaphase, the RAD21 subunit of the cohesin complex is cleaved, leading to the dissociation of the complex from chromosomes, allowing chromosome separation. The phosphorylated form at Ser-1083 is preferentially associated with unsynapsed chromosomal regions (By similarity). {ECO:0000250 UniProtKB:Q9CW03}

Background

Structural maintenance of chromosomes 3, also known as SMC3, is a human gene. This gene belongs to the SMC3 subfamily of SMC proteins. The encoded protein occurs in certain cell types as either an intracellular, nuclear protein or a secreted protein. The nuclear form, known as structural maintenance of chromosomes 3, is a component of the multimeric cohesin complex that holds together sister chromatids during mitosis, enabling proper chromosome segregation. Post-translational modification of the encoded protein by the addition of chondroitin sulfate chains gives rise to the secreted proteoglycan bamacan, an abundant basement membrane protein.

Images

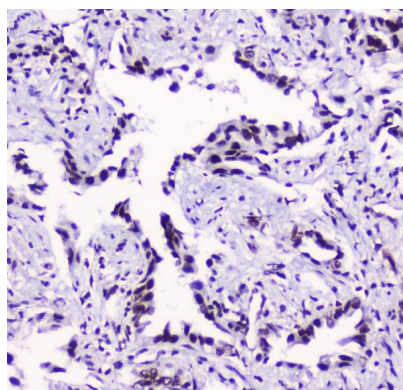
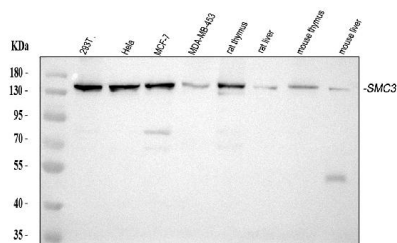


Figure 2. IHC analysis of SMC3 using anti-SMC3 antibody (M01930-1).

SMC3 was detected in paraffin-embedded section of human lung cancer tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 µg/ml mouse anti-SMC3 Antibody (M01930-1) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC)(Catalog # SA1021) with DAB as the chromogen.

Figure 1. Western blot analysis of SMC3 using anti-SMC3 antibody (M01930-1).

Electrophoresis was performed on a 5-20% SDS-PAGE gel



at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions.

Lane 1: human 293T whole cell lysates,

Lane 2: human Hela whole cell lysates,

Lane 3: human MCF-7 whole cell lysates,

Lane 4: human MDA-MB-453 whole cell lysates,

Lane 5: rat thymus tissue lysates,

Lane 6: rat liver tissue lysates,

Lane 7: mouse thymus tissue lysates,

Lane 8: mouse liver 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 mouse anti-SMC3 antigen affinity purified monoclonal antibody (Catalog # M01930-1) at 0.5 µg/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-mouse IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1001) with Tanon 5200 system. A specific band was detected for SMC3 at approximately 142 kDa. The expected band size for SMC3 is at 142 kDa.

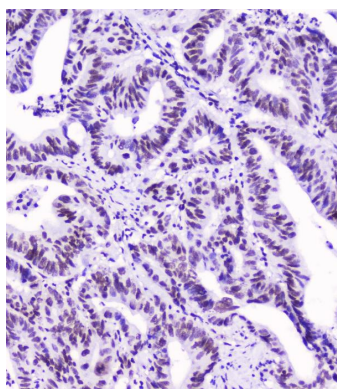


Figure 3. IHC analysis of SMC3 using anti-SMC3 antibody (M01930-1).

SMC3 was detected in paraffin-embedded section of human intestinal cancer tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 µg/ml mouse anti-SMC3 Antibody (M01930-1) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC)(Catalog # SA1021) with DAB as the chromogen.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.