

SMC1A (N-terminus) Antibody

Purified Mouse Monoclonal Antibody (Mab)

Catalog # AP52667

Product Information

Primary Accession	Q14683
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1
Calculated MW	143233

Additional Information

Gene ID	8243
Other Names	Chromosome segregation protein SmcB;DXS423E;KIAA0178;MGC138332;Sb1.8;Segregation of mitotic chromosomes 1;SMC protein 1A;SMC-1-alpha;SMC-1A;SMC1 (structural maintenance of chromosomes 1 yeast) like 1;SMC1;SMC1 structural maintenance of chromosomes 1 like 1;SMC1A;SMC1A_HUMAN;SMC1alpha;SMC1L1;SMCB;Structural maintenance of chromosomes 1A;Structural maintenance of chromosomes protein 1A.
Format	Purified mouse monoclonal in buffer containing 0.1M Tris-Glycine (pH 7.4, 150 mM NaCl) with 0.09% (W/V) sodium azide, 50% glycerol
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

Protein Information

Name	SMC1A
Synonyms	DXS423E, KIAA0178, SB1.8, SMC1, SMC1L1
Function	Involved in chromosome cohesion during cell cycle and in DNA repair. Central component of cohesin complex. The cohesin complex is required for the cohesion of sister chromatids after DNA replication. The cohesin complex apparently forms 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. The cohesin complex may also play a role in spindle pole assembly during mitosis. Involved in DNA repair via its interaction with BRCA1 and its related phosphorylation by ATM, or via its phosphorylation by ATR. Works as a downstream effector both in the ATM/NBS1 branch and in the ATR/MSH2 branch of S-phase checkpoint.
Cellular Location	Nucleus. Chromosome. Chromosome, centromere, kinetochore.

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. In germ cells, cohesin complex dissociates from chromatin at prophase I, and may be replaced by a meiosis-specific cohesin complex. The phosphorylated form on Ser-957 and Ser-966 associates with chromatin during G1/S/G2 phases but not during M phase, suggesting that phosphorylation does not regulate cohesin function. Integral component of the functional centromere-kinetochore complex at the kinetochore region during mitosis

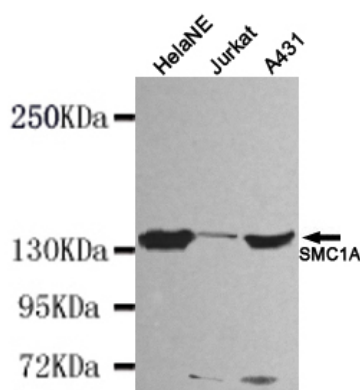
Background

Involved in chromosome cohesion during cell cycle and in DNA repair. Central component of cohesin complex. The cohesin complex is required for the cohesion of sister chromatids after DNA replication. The cohesin complex apparently forms 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. The cohesin complex may also play a role in spindle pole assembly during mitosis. Involved in DNA repair via its interaction with BRCA1 and its related phosphorylation by ATM, or via its phosphorylation by ATR. Works as a downstream effector both in the ATM/NBS1 branch and in the ATR/MSH2 branch of S-phase checkpoint.

References

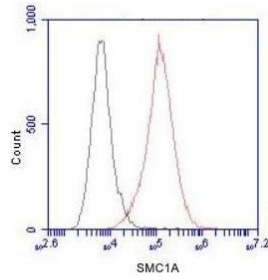
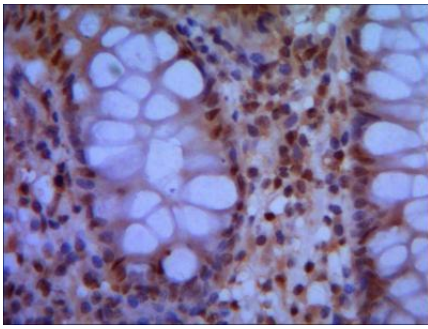
Rocques P.J.,et al.Hum. Mol. Genet. 4:243-249(1995).
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Nakajima D.,et al.DNA Res. 9:99-106(2002).
Ross M.T.,et al.Nature 434:325-337(2005).
Yazdi P.T.,et al.Genes Dev. 16:571-582(2002).

Images



Western blot detection of SMC1A(N-terminus) in HeLaNE, Jurkat and A431 cell lysates using SMC1A (N-terminus) mouse mAb (1:1000 diluted). Predicted band size: 143KDa. Observed band size: 143KDa.

IHC of paraffin-embedded human colon using anti-SMC1A (N-terminus) mouse mAb diluted 1/500-1/1000.



Flow Cytometry analysis of HeLa cells stained with SMC1A (N-terminus) (red, 1/100 dilution), followed by FITC-conjugated goat anti-mouse IgG. Black line histogram represents the isotype control, normal mouse IgG.

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