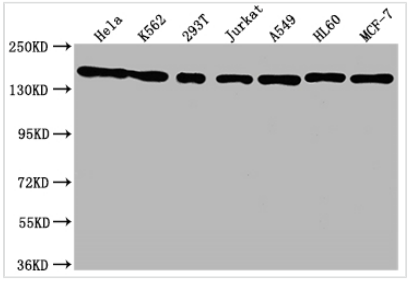
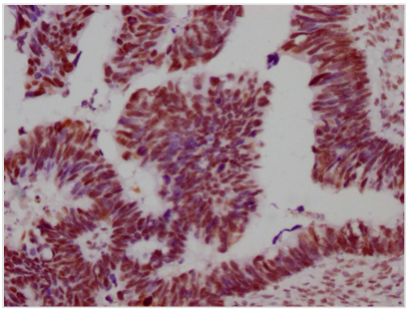
SMC1A Recombinant Monoclonal Antibody

Product Code	CSB-RA149196A0HU
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	Q14683
Immunogen	A synthesized peptide derived from human SMC1
Species Reactivity	Human
Tested Applications	ELISA, WB, IHC; Recommended dilution: WB:1:500-1:5000, IHC:1:50-1:200
Relevance	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.
Form	Liquid
Conjugate	Non-conjugated
Storage Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purification Method	Affinity-chromatography
Isotype	Rabbit IgG
Clonality	Monoclonal
Product Type	Recombinant Antibody
Immunogen Species	Homo sapiens (Human)
Research Area	Epigenetics and Nuclear Signaling; Cell biology
Gene Names	SMC1A
Clone No.	8C11

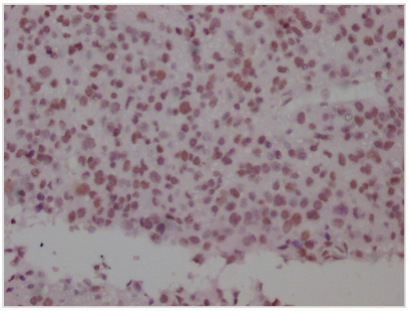
Image



Western Blot
Positive WB detected in: Hela whole cell lysate, K562 whole cell lysate, 293T whole cell lysate, Jurkat whole cell lysate, A549 whole cell lysate, HL60 whole cell lysate, MCF-7 whole cell lysate
All lanes: SMC1A antibody at 1:1500
Secondary
Goat polyclonal to rabbit IgG at 1/50000 dilution
Predicted band size: 144 kDa
Observed band size: 144 kDa



IHC image of CSB-RA149196A0HU diluted at 1:100 and staining in paraffin-embedded human ovarian cancer performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4? overnight. The primary is detected by a Goat anti-rabbit IgG polymer labeled by HRP and visualized using 0.05% DAB.



IHC image of CSB-RA149196A0HU diluted at 1:100 and staining in paraffin-embedded human glioma cancer performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4? overnight. The primary is detected by a Goat anti-rabbit IgG polymer labeled by HRP and visualized using 0.05% DAB.

Description

The SMC1A recombinant monoclonal antibody was produced using protein technology and DNA recombinant technology. Initially, mice were immunized with a synthetic peptide derived from human SMC1A, following which the spleen of mice was extracted aseptically. The total RNA of spleen cells was isolated, and cDNA synthesized by RNA reverse transcription was used as the template for PCR amplification of the SMC1A antibody gene. Subsequently, the obtained gene was introduced into a vector and then transfected into host cells for culture. The SMC1A recombinant monoclonal antibody was purified from the supernatant of the cell culture using affinity chromatography. It was subjected to rigorous validation and can be employed for detecting human SMC1A protein in ELISA, WB, and IHC experiments.

The SMC1A protein is a component of the cohesin complex and plays a role in chromosome organization and DNA repair. SMC1A forms a ring-like structure around the DNA, which helps to stabilize the interaction between the sister chromatids. SMC1A functions in DNA repair by facilitating the rejoining of DNA double-strand breaks. SMC1A has been implicated in the regulation of gene expression. It has been shown to interact with transcription factors and other chromatin-associated proteins to control the transcription of specific genes.