SMC1 Monoclonal Antibody
Cat. No. CC10013

Applications:	WB, IP, IF, IHC
Detected MW:	150 kDa
Species & Reactivity:	Human, Rat, Mouse,
Isotype:	Mouse IgG1

BACKGROUND

Structural maintenance of chromosomes (SMC) proteins fulfills pivotal roles in chromosome dynamics. In somatic cells, the heterodimeric Structural Maintenance of Chromosomes (SMC) proteins are involved in chromosome condensation and gene dosage compensation (SMC2 and 4), and sister chromatid cohesion and DNA recombination (SMC1 and 3). It was demonstrated that mammalian SMC1 and SMC3 proteins are also involved in meiosis.[1] SMC1 and SMC3 proteins are important components of the cohesin complex, necessary for meiotic sister chromatid cohesion and DNA recombination . Mitotic chromosome segregation is facilitated by the cohesin complex, which maintains physical connections between sister chromatids until anaphase. Meiotic cell division is considerably more complex, as cohesion must be released sequentially to facilitate orderly segregation of chromosomes at both meiosis I and meiosis II. This necessitates meiosis-specific cohesin components; recent studies in rodents suggest that these influence chromosome behavior during both cell division and meiotic prophase. SMC1 is likely involved in maintaining cohesion between sister centromeres until anaphase II.[2] In addition, it was also demonstrated that SMC1 is a component of the DNA damage response network that functions as an effector in the ATM/NBS1-dependent S-phase checkpoint pathway.[3]

References:
1. Eijpe M et al.: J. Cell Sc. 113:673-682, 2000.
2. Revenkova E et al.: Mol. Cell. Biol. 21:6984-6998, 2001.
3. Yazdi P T et al.: Genes Dev. 16:571–582, 2002.

TECHNICAL INFORMATION

Source:
SMC1 Antibody is a mouse monoclonal antibody raised against the purified recombinant His-tagged fusion protein containing human SMC1 sequence (136-384 aa) expressed in *E. Coli*.

Specificity and Sensitivity:
This monoclonal antibody detects endogenous levels of SMC1 proteins in various normal primary cell lysates.
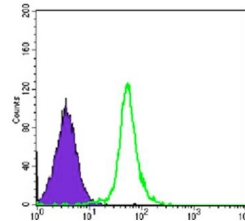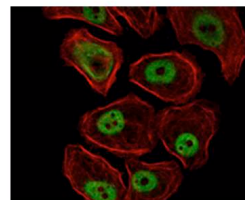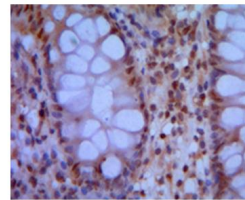
Storage Buffer: PBS and 30% glycerol
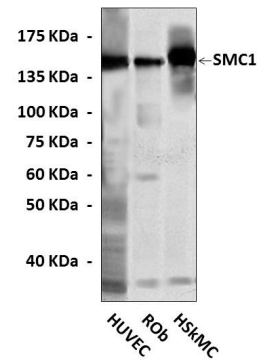
Storage:
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

Application:	*Dilution:
WB	1:1000
IP	1:50
IHC	1:50 - 200
IF	1:100
ICC	1:50 - 200
*Optimal dilutions must be determined by end user.	

QUALITY CONTROL DATA

Top: Western Blot detection of endogenous SMC1 proteins from various normal primary cell lysates. **Middle, upper:** Immunohistochemical staining of paraffin-embedded colon cancer tissue, using Anti-SMC1. **Middle, lower:** It also stains NIH3T3 cells in confocal immunofluorescent testing (SMC1 Antibody: green; Actin filaments have been labeled with Alexa Fluor-555 phalloidin: Red). **Bottom:** It also reacts with HeLa cells in FACS assay (SMC-1 Antibody: green: control: purple).