

SMC-1. Mouse Monoclonal Antibody C2M , Human

BACKGROUND

Structural Maintenance of Chromosomes (SMC) family proteins play critical roles in various nuclear events that require structural changes of chromosomes, including mitotic chromosome organization, DNA recombination and repair and global transcriptional repression. The chromosome proteins are conserved in eukaryotes lead to mitotic chromosome segregator defects, suggesting a critical function of SMC family proteins in mitotic chromosome dynamics.

SMC1 and SMC3 form a heterodimeric complex required for metaphase progression in mitotic cells. Specifically this SMC1/SMC3 complex is responsible for sister chromatid cohesion during metaphase. A number of cellular factors interact with hSMC1/hSMC3 during cell cycle. The major population of hSMC1/hSMC3 is in a complex with hRAD21 forming the human cohesion complex. Human cohesion associates with chromosomes which peaks at S phase and dissociates from chromosomes during G2/M transition. In addition, a subpopulation of hSMC1/hSMC3 associates tightly with nuclear matrix and centrosomes during interphase. A subset of hSMC1/hSMC3 is localized to spindle poles, spindles and kinetochores during mitosis when cohesin is in the cytoplasm. hSMC1/hSMC3 is required for spindle aster formation in vitro and reacts with nuclear mitotic apparatus (2) protein in vivo.

ORDERING INFORMATION

CATALOG NUMBER
X1324M

SIZE
100 µg

FORM
Unconjugated

HOST/CLONE
Mouse Clone C2M

FORMULATION
Provided as solution in phosphate buffered saline with 0.08% sodium azide

CONCENTRATION
1 mg/ml

ISOTYPE

APPLICATIONS
Western Blot, Immunofluorescence

IMMUNOGEN

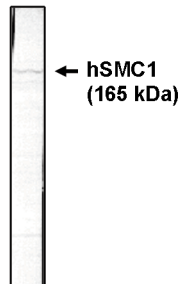
Hybridoma produced by the fusion of splenocytes from mice immunized with recombinant protein corresponding to amino acids 402-894 of human SMC1 and mouse myeloma cells.

SPECIES REACTIVITY

Human

Legend:

Western blotting using SMC1 antibody on HeLa cell lysate at 1 µg/ml.



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POSITIVE CONTROL/TISSUE EXPRESSION

HeLa cells

COMMENTS

This antibody can be used for Western blotting (1-5 $\mu\text{g/ml}$) and immunofluorescence (5-10 $\mu\text{g/ml}$). Optimal concentration should be evaluated by serial dilutions.

SHIP CONDITIONS

Ship at ambient temperature, freeze upon arrival

STORAGE CUSTOMER

Product should be stored at -20°C . Aliquot to avoid freeze/thaw cycles

STABILITY

Products are stable for one year from purchase when stored properly

REFERENCES

1. Eijpe, M., et al. "Association of mammalian SMC1 and SMC3 proteins with meiotic chromosomes and synaptonemal complexes." J. Cell Sci. 2000, 113, 673-682.
2. Stursberg, S., et al. "Cloning and characterization of mammalian SMC1 and SMC3 genes and proteins, components of the DNA recombination complexes RC-1." Gene 1999, 228, 1-12.
3. Strunnikov, A.V., et al. "SMC1: an essential yeast gene encoding a putative head-rod-tail protein is required for nuclear division and defines a new ubiquitous protein family." J. Cell Biol. 1993, 123, 1635-1648.

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