SANTA CRUZ BIOTECHNOLOGY, INC.

SMC2 (L-20): sc-10711

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The Power to Question

BACKGROUND

The SMC (structural maintenance of chromosomes) family of proteins form heterodimeric complexes that modulate sister chromatid cohesion and chromosome condensation for mitosis. The two distinct classes of SMC protein complexes are comprised of SMC1 (also designated SB1.8) with SMC3 (also designated HCAP for human chromosome-associated protein and Bamacan for the secreted proteoglycan), and SMC2 (also designated hCAP-E) with SMC4 (also designated hCAP-C). The SMC1/SMC3 complex is required for metaphase progression in mitotic cells and functions independently of the SMC2/SMC4 complex during the cell cycle. SMC1 is ubiqitiously expressed in various human tissues, including thymus, testis, and colon. SMC3 is expressed as a nuclear protein in the colon, but can also occur as a secreted proteoglycan expressed in testis and brain. The secreted proteoglycan contains several glycosylation sites and is thought to play a role in basement membrane physiology.

REFERENCES

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2. Rocques, P.J., et al. 1995. The human SB1.8 gene (DXS423E) encodes a putative chromosome segregation protein conserved in lower eukaryotes and prokaryotes. Hum. Mol. Genet. 4: 243-249.
3. Ljubimov, A.V., et al. 1996. Basement membrane abnormalities in human eyes with diabetic retinopathy. J. Histochem. Cytochem. 44: 1469-1479.
4. Wu, R.R., et al. 1997. cDNA cloning of the basement membrane chondroitin sulfate proteoglycan core protein, Bamacan: a five domain structure including coiled-coil motifs. J. Cell Biol. 136: 433-444.
5. Schmiesing, J.A., et al. 1998. Identification of two distinct human SMC protein complexes involved in mitotic chromosome dynamics. Proc. Natl. Acad. Sci. USA 95: 12906-12911.
6. Strunnikov, A.V., et al. 1999. Structural maintenance of chromosomes (SMC) proteins: conserved molecular properties for multiple biological functions. Eur. J. Biochem. 263: 6-13.
7. Nishiwaki, T., et al. 1999. Isolation and characterization of a human cDNA homologous to the *Xenopus laevis* XCAP-C gene belonging to the structural maintenance of chromosomes (SMC) family. J. Hum. Genet. 4: 197-202.
8. Ghiselli, G., et al. 1999. Complete cDNA cloning, genomic organization, chromosomal assignment, functional characterization of the promoter, and expression of the murine Bamacan gene. J. Biol. Chem. 274: 17384-17393.
9. Ghiselli, G., et al. 2000. Overexpression of Bamacan/SMC3 causes transformation. J. Biol. Chem. 275: 20235-20238.

CHROMOSOMAL LOCATION

Genetic locus: SMC2 (human) mapping to 9q31.1; Smc2 (mouse) mapping to 4 B2.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

SOURCE

SMC2 (L-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of SMC2 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-10711 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-10711 X, 200 µg/0.1 ml.

APPLICATIONS

SMC2 (L-20) is recommended for detection of SMC2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

SMC2 (L-20) is also recommended for detection of SMC2 in additional species, including equine, canine, porcine and avian.

Suitable for use as control antibody for SMC2 siRNA (h): sc-38389, SMC2 siRNA (m): sc-38390, SMC2 shRNA Plasmid (h): sc-38389-SH, SMC2 shRNA Plasmid (m): sc-38390-SH, SMC2 shRNA (h) Lentiviral Particles: sc-38389-V and SMC2 shRNA (m) Lentiviral Particles: sc-38390-V.

SMC2 (L-20) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.