SANTA CRUZ BIOTECHNOLOGY, INC.

SMC1α (C-17): sc-10707

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

1. Strunnikov, A.V., et al. 1993. 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. 123: 1635-1648.
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.

CHROMOSOMAL LOCATION

Genetic locus: SMC1A (human) mapping to Xp11.22; Smc1a (mouse) mapping to X F3.

SOURCE

SMC1α (C-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of SMC1α 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-10707 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-10707 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SMC1α (C-17) is recommended for detection of SMC1α of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

SMC1α (C-17) is also recommended for detection of SMC1α in additional species, including equine, canine, bovine, porcine and avian.

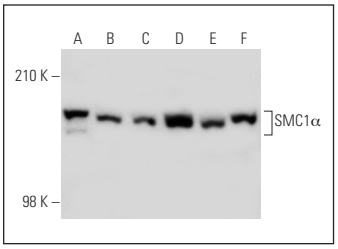
Suitable for use as control antibody for SMC1α siRNA (h): sc-38385, SMC1α siRNA (m): sc-38386, SMC1α shRNA Plasmid (h): sc-38385-SH, SMC1α shRNA Plasmid (m): sc-38386-SH, SMC1α shRNA (h) Lentiviral Particles: sc-38385-V and SMC1α shRNA (m) Lentiviral Particles: sc-38386-V.

SMC1α (C-17) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of SMC1α: 155 kDa.

Positive Controls: MOLT-4 nuclear extract: sc-2151, K-562 nuclear extract: sc-2130 or NIH/3T3 nuclear extract: sc-2138.

DATA



SMC1α (C-17): sc-10707. Western blot analysis of SMC1α expression in U-937 (**A**), K-562 (**B**), NIH/3T3 (**C**), MOLT-4 (**D**), Jurkat (**E**) and HL-60 (**F**) nuclear extracts.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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

MONOS Satisfaction Guaranteed

Try **SMC1α (H-6): sc-393171** or **SMC1α (E-8): sc-166734**, our highly recommended monoclonal alternatives to SMC1α (C-17).