

# SMC4 (T-18): sc-10713

## 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 and bamacan), and SMC2 (also designated hCAP-E for chromosome-associated polypeptide E) with hCAP-C. The SMC2/hCAP-C complex is required for mitotic chromosome condensation and functions independently of the SMC1/SMC3 complex during the cell cycle. Both SMC2 and hCAP-C are expressed throughout the cell cycle in a variety of cell lines, including HeLa cells, Daudi B cells, Jurkat T cells, SK2 neuronal cells, and HepG2 liver cells.

## 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. 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.
4. 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.
5. 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.* 44: 197-202.

## CHROMOSOMAL LOCATION

Genetic locus: SMC4 (human) mapping to 3q25.33; Smc4 (mouse) mapping to 3 E1.

## SOURCE

SMC4 (T-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of SMC4 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-10713 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-10713 X, 200 µg/0.1 ml.

## STORAGE

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

## APPLICATIONS

SMC4 (T-18) is recommended for detection of SMC4 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).

SMC4 (T-18) is also recommended for detection of SMC4 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for SMC4 siRNA (h): sc-38384, SMC4 siRNA (m): sc-153620, SMC4 shRNA Plasmid (h): sc-38384-SH, SMC4 shRNA Plasmid (m): sc-153620-SH, SMC4 shRNA (h) Lentiviral Particles: sc-38384-V and SMC4 shRNA (m) Lentiviral Particles: sc-153620-V.

SMC4 (T-18) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

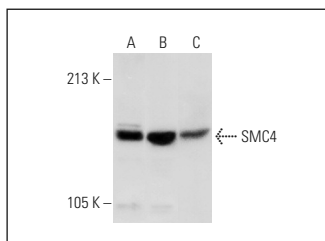
Molecular Weight of SMC4: 165 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, MCF7 nuclear extract: sc-2149 or NIH/3T3 whole cell lysate: sc-2210.

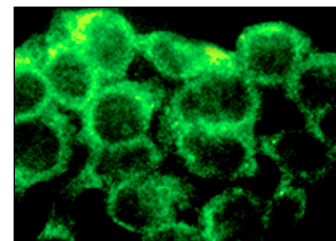
## RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



SMC4 (T-18): sc-10713. Western blot analysis of SMC4 expression in HeLa (A) and MCF7 (B) nuclear extracts and NIH/3T3 whole cell lysate (C).



SMC4 (T-18): sc-10713. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.