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- Expressversand

### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

# SMC4 siRNA (m): sc-153620

## 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 Hep G2 liver cells.

## REFERENCES

1. Strunnikov, A.V., Larionov, V.L. and Koshland, D. 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., Clark, J., Ball, S., Crew, J., Gill, S., Christoldoulou, Z., Borts, R.H., Louis, E.J., Davies, K.E. and Cooper, C.S. 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., Ball, A.R., Gregson, H.C., Alderton, J.M., Zhou, Sh. and Yokomori, K. 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. and Jessberger, R. 1999. Structural maintenance of chromosomes (SMC) proteins: conserved molecular properties for multiple biological functions. *Eur. J. Biochem.* 263: 6-13.
5. Nishiwaki, T., Daigo, Y., Kawasoe, T., Nagasawa, Y., Ishiguro, H., Fujita, M., Furukawa, Y. and Nakamura, Y. 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* (mouse) mapping to 3 E1.

## PRODUCT

SMC4 siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SMC4 shRNA Plasmid (m): sc-153620-SH and SMC4 shRNA (m) Lentiviral Particles: sc-153620-V as alternate gene silencing products.

For independent verification of SMC4 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-153620A, sc-153620B and sc-153620C.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

SMC4 siRNA (m) is recommended for the inhibition of SMC4 expression in mouse cells.

## SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10  $\mu$ M in 66  $\mu$ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SMC4 gene expression knockdown using RT-PCR Primer: SMC4 (m)-PR: sc-153620-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## 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) for detailed protocols and support products.