

SWAP-70 siRNA (h): sc-106898

BACKGROUND

SWAP-70 is a protein that is part of a protein complex that catalyzes cell-free DNA recombination between immunoglobulin (Ig) heavy chain gene-switch region substrates. In resting B lymphocytes, SWAP-70 is localized mainly in the cytoplasm, however, in activated B cells, SWAP-70 is recruited to the plasma membrane and then translocates to the nucleus. In the nucleus, SWAP-70 recognizes specific switch regions, acting as a switch recombinase and causing a DNA break. The cellular and intracellular localization before and after B cell activation also suggests a role for SWAP-70 in signaling in B cell activation. In addition, SWAP-70 contains three nuclear localization signals, has a weak affinity for DNA, binds ATP and forms specific, high affinity complexes with B23, C23 and poly (ADP-ribose) polymerase.

REFERENCES

1. Borggreffe, T., Masat, L., Wabl, M., Riwar, B., Cattoretto, G. and Jessberger, R. 1998. A B-cell-specific DNA recombination complex. *J. Biol. Chem.* 273: 17025-17035.
2. Borggreffe, T., Wabl, M., Akhmedov, A.T. and Jessberger, R. 1999. Cellular, intracellular, and developmental expression patterns of murine SWAP-70. *Eur. J. Immunol.* 29: 1812-1822.
3. Qi, C.F., Jessberger, R., Torrey, T.A., Taddesse-Heath, L., Ohta, Y. and Morse, H.C., 3rd. 1999. Differential regulation of germinal center genes, BCL6 and SWAP-70, during the course of MAIDS. *Mol. Immunol.* 36: 1043-1053.
4. Masat, L., Caldwell, J., Armstrong, R., Khoshnevisan, H., Jessberger, R., Herndier, B., Wabl, M. and Ferric, D. 2000. Association of SWAP-70 with the B cell antigen receptor complex. *Proc. Natl. Acad. Sci. USA* 97: 2180-2184.
5. Masat, L., Liddell, R.A., Mock, B.A., Kuo, W.L., Jessberger, R., Wabl, M. and Morse, H.C. 2000. Mapping of the SWAP-70 gene to mouse chromosome 7 and human chromosome 11p15. *Immunogenetics* 51: 16-19.

CHROMOSOMAL LOCATION

Genetic locus: SWAP70 (human) mapping to 11p15.4.

PRODUCT

SWAP-70 siRNA (h) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SWAP-70 shRNA Plasmid (h): sc-106898-SH and SWAP-70 shRNA (h) Lentiviral Particles: sc-106898-V as alternate gene silencing products.

For independent verification of SWAP-70 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-106898A, sc-106898B and sc-106898C.

PROTOCOLS

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

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

APPLICATIONS

SWAP-70 siRNA (h) is recommended for the inhibition of SWAP-70 expression in human 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 μ M in 66 μ 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.

GENE EXPRESSION MONITORING

SWAP-70 (F-3): sc-390431 is recommended as a control antibody for monitoring of SWAP-70 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SWAP-70 gene expression knockdown using RT-PCR Primer: SWAP-70 (h)-PR: sc-106898-PR (20 μ l, 557 bp). 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.