SANTA CRUZ BIOTECHNOLOGY, INC.

SNM1B siRNA (h): sc-88509

BACKGROUND

DNA interstrand cross-links (ICLs) pose lethal threats to DNA as they inhibit segregation, replication and transcription. The mechanism of ICL repair is complex but is at least partly conserved between *Saccharomyces cerevisiae* and mammals. SNM1B (SNM1 homolog B), also known as DCLRE1B (DNA cross-link repair 1B (PSO2 homolog, *S. cerevisiae)*) or APOLLO, is a 532 amino acid nuclear protein that localizes to discrete foci and is likely required for DNA interstrand cross-link repair. SNM1B assists in the maintenance of telomeres during S-phase and interacts with TRF2 (telomeric repeat binding factor 2), a protein involved in telomeric organization and protection, in the early DNA-damage response. A member of the DNA repair metallo-β-lactamase (DRMBL) family, SNM1B becomes phosphorylated following translation, either by ATM or ATR, and is encoded by a gene located on human chromosome 1p13.2.

REFERENCES

1. Dronkert, M.L., et al. 2000. Disruption of mouse SNM1 causes increased sensitivity to the DNA interstrand cross-linking agent mitomycin C. Mol. Cell. Biol. 20: 4553-4561.
2. Demuth, I., et al. 2004. Human SNM1B is required for normal cellular response to both DNA interstrand crosslink-inducing agents and ionizing radiation. Oncogene 23: 8611-8618.
3. Freibaum, B.D. and Counter, C.M. 2006. hSnm1B is a novel telomere-associated protein. J. Biol. Chem. 281: 15033-15036.
4. Demuth, I., et al. 2008. Endogenous hSNM1B/Apollo interacts with TRF2 and stimulates ATM in response to ionizing radiation. DNA Repair 7: 1192-1201.
5. Freibaum, B.D. and Counter, C.M. 2008. The protein hSnm1B is stabilized when bound to the telomere-binding protein TRF2. J. Biol. Chem. 283: 23671-23676.
6. Chen, Y., et al. 2008. A shared docking motif in TRF1 and TRF2 used for differential recruitment of telomeric proteins. Science 319: 1092-1096.
7. Liu, L., et al. 2009. SNM1B/Apollo interacts with astrin and is required for the prophase cell cycle checkpoint. Cell Cycle 8: 628-638.

CHROMOSOMAL LOCATION

Genetic locus: DCLRE1B (human) mapping to 1p13.2.

PRODUCT

SNM1B 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SNM1B shRNA Plasmid (h): sc-88509-SH and SNM1B shRNA (h) Lentiviral Particles: sc-88509-V as alternate gene silencing products.

For independent verification of SNM1B (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-88509A, sc-88509B and sc-88509C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

SNM1B siRNA (h) is recommended for the inhibition of SNM1B 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 µM in 66 µl. 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

SNM1B (F-8): sc-374351 is recommended as a control antibody for monitoring of SNM1B 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 SNM1B gene expression knockdown using RT-PCR Primer: SNM1B (h)-PR: sc-88509-PR (20 µl). 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 for detailed protocols and support products.