



WRN siRNA (m): sc-36844

BACKGROUND

Werner's syndrome (WS), also called adult progeria, is an inherited, autosomal recessive disorder that is most common in families from regions of Japan where consanguineous marriages occur frequently. WS is characterized by premature aging and the early onset of age-related diseases and commonly results in cancer. The gene responsible for Werner's syndrome, WRN, has been mapped to the short arm of chromosome 8, and the subsequent cloning of the gene has revealed a predicted protein of 1,432 amino acids in length that bears significant sequence homology with DNA helicases. Four mutations in WRN have been identified in patients afflicted with WS. Two of the mutations involve mRNA splice-junctions. Of these two mutations, one was found in 60% of the individuals examined. This mutation is predicted to cause a frameshift which results in a truncated WRN protein.

REFERENCES

1. Thomas, W., et al. 1993. A genetic analysis of the Werner's syndrome region on human chromosome 8p. *Genomics* 16: 685-690.
2. Yu, C.E., et al. 1994. Linkage disequilibrium and haplotype studies of chromosome 8p11.1-21.1 markers and Werner's syndrome. *Am. J. Hum. Genet.* 55: 356-364.
3. Nakura, J., et al. 1994. Homozygosity mapping of the Werner's syndrome locus (WRN). *Genomics* 23: 600-608.
4. Ye, L., et al. 1995. Genetic association between chromosome 8 microsatellite (MS8-134) and Werner's syndrome (WRN): chromosome microdissection and homozygosity mapping. *Genomics* 28: 566-599.

CHROMOSOMAL LOCATION

Genetic locus: Wrn (mouse) mapping to 8 A3.

PRODUCT

WRN 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see WRN shRNA Plasmid (m): sc-36844-SH and WRN shRNA (m) Lentiviral Particles: sc-36844-V as alternate gene silencing products.

For independent verification of WRN (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-36844A, sc-36844B and sc-36844C.

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

WRN siRNA (m) is recommended for the inhibition of WRN 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 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

WRN (D-6): sc-376182 is recommended as a control antibody for monitoring of WRN 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 WRN gene expression knockdown using RT-PCR Primer: WRN (m)-PR: sc-36844-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Chen, A.C.H., et al. 2020. Sirt1 is regulated by miR-135a and involved in DNA damage repair during mouse cellular reprogramming. *Aging* 12: 7431-7447.

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.